

The American Midland Naturalist

Devoted to Natural History, Primarily
that of the Prairie States

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MARCH, 1929.

No. 8.

A LIST OF PLANTS GROWING UNDER CULTIVATION IN THE VICINITY OF COLD SPRING HARBOR, N. Y.

N. M. AND C. R. GRIER

(Continued from Last Issue.)

ORDER XXIV. SAPINDALES.

BUXACEAE.

- Buxus balearica* Willd. Spanish Box. Hodenpyl.
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Buxus microphylla Sieb. and Zucc. Country Life Press.
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Pachysandra procumbens Michx. DeForest, Hodenpyl.
Pachysandra terminalis Sieb. & Zucc. Hodenpyl, DeForest, Willys, Hicks, Havemeyer, Pratt.

EMPETRACEAE.

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CORIARIACEAE.

- Coriaria terminalis* Hemsl. Sikkim Coriaria. Bailey.

ANACARDIACEAE.

- Cotinus Coggygria* Scop. Smoke-Tree. C. S. H. village. DeForest, Hodenpyl, Hicks, Bailey.
Rhus canadensis Marsh. Fragrant Sumac. Bailey, Hodenpyl.
Rhus copallina L. Shining Sumac. Bailey, Hodenpyl, Hicks.

- Rhus glabra* L. Smooth Sumac. Hodenpyl; var. *cismontana* Hort. (Yellow Sumac), Hodenpyl.
Rhus javanica L. Java Sumac. Hodenpyl, Bailey.
Rhus orientalis Hort. Hodenpyl.
Rhus typhina L. Staghorn Sumac. DeForest, Hodenpyl, C. S. H., Hicks.

AQUIFOLIACEAE.

- Ilex Aquifolium* L. English Holly. Matheson, DeForest, Havemeyer.
Ilex cornuta Lindl. Chinese Holly. Havemeyer.
Ilex crenata Thunb. Japanese Holly. Tiffany, Matheson, Havemeyer, DeForest, Hodenpyl, Hicks; var. *microphylla* Hort. Little Leaf Japanese Holly, Matheson.
Ilex decidua Walt. Possum Haw. Bailey.
Ilex glabra Gray. Inkberry. Matheson, Bailey, DeForest, Hodenpyl, Hicks, Havemeyer, Country Life Press.
Ilex geniculata Hort. Hodenpyl.
Ilex opaca Ait. American Holly. Matheson, Bailey, Tiffany, DeForest, Hodenpyl, Hicks, Havemeyer, Country Life Press.
Ilex verticillata Gray. Black Alder. Matheson, Bailey, Havemeyer, Hodenpyl, Hicks.
Nemopanthes mucronatus (L.) Trel. Mountain Holly. Hodenpyl.

CELASTRACEAE.

- Celastrus angulatus* Max. Hodenpyl.
Celastrus orbiculatus Thunb. Oriental Bittersweet. Hodenpyl, Hicks; var. *punctatus* Rehder. Christmas Bittersweet. Hodenpyl.
Celastrus paniculatus Willd. Hodenpyl, Havemeyer.
Celastrus scandens L. Waxwork. Bailey, Hodenpyl, DeForest, Matheson, Hicks, Havemeyer.
Euonymus alata Regel. Winged Euonymus. Bailey, Tiffany, Matheson, DeForest, Hodenpyl, Hicks, Havemeyer.
Euonymus americanus L. Brook Euonymus or Strawberry Bush. Bailey, Matheson.

- Euonymus atropurpureus* Jacq. Wahoo or Burning Bush. Bailey.
- Euonymus Bungeana* Maxim. Winterberry Euonymus. Bailey, Hicks.
- Euonymus europaea* L. Hodenpyl.
- Euonymus japonica* L. Evergreen Burning Bush. Hodenpyl, Bailey, Willys, Kahn.
- Euonymus nana* Bieb. Dwarf Burning Bush. Hodenpyl.
- Euonymus obovata* Nutt. Hicks Nursery. Hodenpyl.
- Euonymus planipes* Hort. Hodenpyl.
- Euonymus radicans* Sieb. Wintercreeper. Tiffany, Matheson, Hodenpyl, Hicks, Havemeyer; var. *acutus* Hort. (Sharp leaf W.), Hodenpyl, Hicks, Havemeyer; var. *kewensis* Hort. (Baby W.), Bailey, Matheson, DeForest, Hodenpyl, Havemeyer; var. *vegetus* Hort. (Big leaf W.), Matheson, DeForest, Hodenpyl, Hicks, Country Life Press, Hort. (*E. Sieboldianus*, Blume.)
- Euonymus yedoensis* Hort. Yeddo Euonymus. Bailey.
- Euodia hupchensis* Hort. Hodenpyl.
- Pachistima Canbyi* Gray. Canby Pachistima. DeForest, Hodenpyl, Hicks, Bailey.
- Pachistima myrsinites* Raf. Myrtle Pachistima. Hodenpyl.
- Tripterygium Regilii* Sprague and Ketchum. Hodenpyl.

STAPHYLEACEAE.

- Staphylea Bumalda* DC. Bumalda Bladdernut. Bailey, Havemeyer.
- Staphylea colchia* Stev. Colchis Bladdernut. Hodenpyl.
- Staphylea trifolia* L. Bladder Nut. C. S. H. vicinity.

ACERACEAE.

- Acer campestre* L. Hedge Maple. Bailey.
- Acer crataegifolium* S. and Z. Hodenpyl.
- Acer Ginnala* Maxim. Amur Maple. DeForest, Hodenpyl, Bailey, Hicks.
- Acer japonicum* Thunb. Full-Moon Maple. Pratt. Var. *Parsonsi* Veitch, Fernleaf Maple, DeForest, Hodenpyl.
- Acer Negundo* L. Box-Elder. Hodenpyl, Willys, Bailey.

Acer palmatum Thunb. Japanese Maple. Willys, Hodenpyl, Matheson, Bailey, Hicks, Tiffany. Var. *atropurpureum* Van Houte. Purple Leaved Japanese Maple, Willys, Hodenpyl, Matheson; var. *dissectum*, Koch. Japanese Cut-leaved Maple, Matheson; var. *reticulatum* Andre. Green Net Maple, Hodenpyl; var. *rubrum* Schwer. Red Japanese Maple. Matheson, DeForest.

Acer pennsylvanicum L. Striped Maple. Hodenpyl, Bailey.

Acer pictum Thunb. Painted Maple. Hodenpyl.

Acer platanoides L. Norway Maple. DeForest, Hodenpyl. Matheson, Bailey, Hicks, Pratt; var. *cucullatum* Nicholls, Crimped Norway Maple, Willys; var. *globosum* Hort., Globe Maple, Hicks; var. *Schwedleri* Koch, Schwedler Maple, Willys, Hicks.

Acer Pseudo-platanus L. Sycamore Maple. Hodenpyl, Matheson, Bailey, Tiffany, Hicks.

Acer Pseudo-Sieboldianum Hort. Hodenpyl.

Acer rubrum L. Red Maple. Matheson, Hodenpyl, Willys, Bailey, Hicks.

Acer saccharinum L. Silver Maple. Willys, Bailey, Hicks, Pratt.

Acer saccharum Marsh. Sugar Maple. Hodenpyl, Hicks.

Acer spicatum Lam. Mountain Maple. Hodenpyl.

Acer tataricum L. Tatarian Maple. Hodenpyl.

HIPPOCASTANACEAE.

Aesculus carnea Hayne. Havemeyer. Var. *Briotti* Nicholls. Ruby Horse Chestnut. Bailey.

Aesculus discolor var. *Mollis* Sarg. Scarlet Buckeye. DeForest, Hodenpyl, Bailey.

Aesculus georgiana Sarg. Georgia Buckeye. DeForest, Hodenpyl, Matheson.

Aesculus glabra Willd. Ohio Buckeye. Bailey, Hicks.

Aesculus glaucescens Sarg. Hodenpyl.

Aesculus Hippocastanum L. Common Horse Chestnut. Matheson, Bailey, Hicks, Willys, Havemeyer, Pratt.

Aesculus octandra Marsh. Yellow Buckeye. Bailey.

Aesculus parviflora Walt. Buckeye. DeForest, Hicks, Matheson, Bailey, Country Life Press.

Aesculus Pavia L. Red Buckeye. Hodenpyl, Bailey.

Aesculus Pavia var. *atrosanguinea* Hort. Red Buckeye. Bailey, Willys.

Aesculus turbinata Blumc. Japanese Horse Chestnut. Hodenpyl, Bailey.

SAPINDACEAE.

Koelreuteria paniculata Laxm. Golden Rain-Tree. DeForest, Hodenpyl, Bailey, Hicks, Havemeyer, Country Life Press.

Paullinia thalictrifolia Juss. Meadow Rue Paullinia. Havemeyer.

Xanthoceras sorbifolia Bunge. Hodenpyl, Havemeyer.

BALSAMINACEAE.

Impatiens Balsamina L. Garden Balsam. Bailey.

ORDER XXV. RHAMNALES.

RHAMNACEAE.

Berchemia racemosa Sieb. and Zucc. Japanese Supplejack. Matheson.

Ceanothus americanus L. Jersey Tea. Bailey, Hodenpyl, DeForest.

Rhamnus Cathartica L. Common Buckthorn. Matheson, Hodenpyl, Hicks.

Rhamnus Frangula L. Glossy Buckthorn. Hodenpyl.

Rhamnus schneideri var. *mandschurica* Hort. Hodenpyl.

VITACEAE.

Ampleopsis aconitifolia Bunge. Hodenpyl, Bailey. Var: *dissecta* Koehne. Hodenpyl.

Ampleopsis amurensis Hort. (?) Amur Ampelopsis. Hodenpyl.

Ampelopsis brevipedunculata Koehne. Blackford Hall, C. S. H., Hodenpyl; var. *elegans* Koch. Bailey, Hodenpyl.

Ampelopsis cordata Michx. Heartleaf Ampelopsis. Hodenpyl.

Ampelopsis henryana Hort. Silver Vein Creeper. Bailey.

Ampelopsis quinquefolia Michx. (*Parthenocissus quinquefolia*

Planch) Virginia Creeper. Hodenpyl, Tiffany, Blackford Hall, C. S. H., Bailey, Matheson, Hicks, Willys; var. *Engelmanni* Hort. Bailey, Hodenpyl, Hicks.

Ampelopsis tricuspidata Sieb. & Zucc. (*Parthenocissus tricuspidata* Planch) Japanese or Boston Ivy. Hodenpyl, Tiffany, Blackford Hall, C. S. H., Hicks, Kahn, Matheson.

Vitis aestivalis Michx. Summer Grape. Hodenpyl, Havemeyer.

Vitis Coignetiae Pulliatt. Glory Vine. Hodenpyl, Hicks, Havemeyer.

Vitis Labrusca L. Fox Grape. DeForest, Huntington Road, C. S. H.

ORDER XXVI. MALVALES.

TILIACEAE.

Tilia americana L. (*T. glabra* Vent.) Linden, Matheson, Bailey, Willys, DeForest, Hicks, Havemeyer.

Tilia cordata Mill. Small-leaved Linden. Hicks, Matheson, Pratt. Var: *cordifolia* (Heartleaf European Linden), Willys.

Tilia euchlora Koch. Crimean Linden. Hodenpyl.

Tilia flarescens Hort. Yellow Linden. Matheson.

Tilia heterophylla Vent. Beetree Linden. Bailey.

Tilia petiolaris Hook. Weeping Linden. Willys.

Tilia platyphyllos Scop. Large-leaved Lime. Bailey, Matheson, Hicks.

Tilia tomentosa Moench. White Linden. Matheson. Var: *spectabilis* Ait. Showy Linden. Hicks. Var: *pendula* Hook. Matheson, Hicks.

Tilia vulgaris Hayne. Matheson, Hicks.

MALVACEAE.

Althaea officinalis L. Marsh Mallow. Matheson, Bailey, Tiffany, Hodenpyl.

Althaea rosea Cav. Hollyhock. Matheson, DeForest, Tiffany, Bailey, Hicks, Havemeyer, Pratt, Country Life Press. Var: "*Beatrice coccinea*" Hort., Hodenpyl; var: "*Newport Pink Hollyhock*" Hort., Matheson.

- Callirhoe involucrata* Gray. Poppy Mallow. Hicks, Hodenpyl.
Hibiscus esculentus L. Okra. Havemeyer, Laughlin's garden, C. S. H.
Hibiscus Moscheutos L. Common Rose Mallow. Bailey, Tiffany, Matheson, Hodenpyl, Hicks.
Hibiscus oculiroseus Britt. Marsh, C. S. H., Laboratory Grounds, C. S. H.
Hibiscus syriacus L. Rose of Sharon. Bailey, DeForest, Hicks, Tiffany, Havemeyer.
Lavatera sp? Tree mallow. Matheson, Bailey.
Malva involucrata A. Gray Purple Mallow. Sanderson estate, Locust Valley.
Malva moschata L. Musk Mallow. C. S. H. Village.
Sidalcea candida Gray. White Prairie Mallow. Hicks.
Sidalcea malvaeflora Gray. Checkerbloom. Havemeyer.

ORDER XXVII. PARIETALES (INCLUDING VIOLALES).

DILLENiaceae.

- Actinidea arguta* Miq. Matheson, Hicks, Havemeyer.
Actinidia chinensis Planch. Yangtao. Hodenpyl.
Actinidia Kolomikta Maxim. Havemeyer.
Actinidia melanandra Franch. Hodenpyl.
Actinidia polygama Maxim. Silver Vine. Hodenpyl, Matheson.
Actinidia Wilsoni Hort. Hodenpyl.

TERNSTROEMIACEAE.

- Camellia japonica* L. Common Camellia. Tiffany.
Franklinia alatamaha Marsh (*Gordonia alatamaha* Sarg.)
Gordonia. Bailey, Hicks.
Stewartia pentagyna L. Her. Mountain Stewartia. Hodenpyl, Bailey.
Stewartia Pseudo-Camellia Maxim. Japanese Stewartia. Hodenpyl, Hicks, Bailey, Havemeyer.

GUTTIFERAE.

- Hypericum aureum* Bartram. Golden St. Johnswort. Hodenpyl.
Hypericum Bucklei M. M. Curtis. Mountain St. Johnswort. Hodenpyl.

- Hypericum calycinum* L. Aarons Beard. Hodenpyl, Havemeyer.
Hypericum densiflorum Pursh. Havemeyer.
Hypericum Kalmianum L. Kalm Hypericum. Hodenpyl.
Hypericum Moserianum Andre. Gold Flower. Matheson, DeForest, Hodenpyl, Hicks.
Hypericum patulum Thunb. Japanese Hypericum. Var. *Henryi* Veitch. Hodenpyl, Havemeyer; var. *uralum* Koehne, St. Johnswort. Hodenpyl.
Hypericum splendens Hort. Hodenpyl.
Hypericum prolificum L. Shrubby St. Johnswort. Hodenpyl.
Hypericum repens Hort. Country Life Press.

TAMARICACEAE.

- Tamarix africana* Hort. African Tamarix (*T. parviflora* DC.) Hicks, Bailey.
Tamarix gallica L. French Tamarisk. Havemeyer, Matheson.
Tamarix hispida Willd. Kashgar Tamarix. Havemeyer.
Tamarix pentandra Pall. Firestamen Tamarix. Matheson.
Tamarix tetrandra Pall. Fourstamen Tamarix. Bailey.

CISTACEAE.

- Cistus laurifolius* L. Laurel Rockrose. Hodenpyl.
Helianthemum Chamaecistus Mill. Common Sunrose. Bailey, DeForest, Hicks, Havemeyer; var. *tomentosum* Hort. (Rosemary Sunrose), Hodenpyl.
Helianthemum roseum Hort. Red Sun Rose. Country Life Press.

VIOLACEAE.

- Viola blanda* Willd. Sweet White Violet. DeForest.
Viola canadensis L. Canada Violet. Hodenpyl.
Viola conspersa Reichenb. Hodenpyl.
Viola cornuta L. Horned Violet. Tiffany, Matheson, DeForest, Hodenpyl, Hicks, Havemeyer; var. *G. Wermia* Hort. DeForest; var. Yellow Gold (*cornuta lutea* Hort.), Hodenpyl.
Viola cucullata Ait. Blue Marsh Violet. Hodenpyl.
Viola gracilis Sibth. and Smith. Country Life Press.

- Viola lutea* Huds. European Yellow Violet. Matheson.
Viola odorata L. Sweet Violet. Hodenpyl, Havemeyer.
Viola pedata L. Birds Foot Violet. Hodenpyl. Country Life Press; var. *bicolor* Hort. Country Life Press.
Viola pubescens Ait. Downy Yellow Violet. Hodenpyl.
Viola rotundifolia Michx. Roundleaf Violet. Hodenpyl.
Viola sagittata Ait. Arrowleaf Violet. Hodenpyl.
Viola septentrionalis Greene. Northern Blue Violet. Hodenpyl.
Viola tricolor L. var. *hortensis* DC. Pansy. Havemeyer.

BEGONIACEAE.

- Begonia gracilis* H. B. K. Slender Begonia. Tiffany.
Begonia Rex Putz. Fish Hatchery, C. S. H. Tiffany.
Begonia socotrana Hook. Var. *Gloire de Lorraine* Hort. Bailey, Willys; var. *Melior* Hort. Willys, Vernon, Tiffany.

ORDER XXVIII. OPUNTIALES.

CACTACEAE.

- Echinocactus lorijonthalonius* Hort. Hodenpyl.
Echinocactus lepisacanthos Hort. Hodenpyl.
Epiphyllum sp? Fish Hatchery, C. S. H.
Opuntia arenaria Engelm. Sand Cactus. Tiffany, Hodenpyl.
Opuntia basilaris Engelm and Begel. Beavertail Cactus. Tiffany.
Opuntia fragilis Haw. Hodenpyl.
Opuntia imbricata P. DC. Walking Stick Cactus. Tiffany, Hodenpyl.
Opuntia polyacantha Hort. Hodenpyl.
Opuntia vulgaris Mill. DeForest, Hicks. Country Life Press.

ORDER XXIX. MYRTIFLORAE.

THYMELAEACEAE.

- Daphne Cneorum* L. Rose Daphne. Bailey, DeForest, Hodenpyl, Hicks, Havemeyer, Country Life Press.
Daphne Genkwa Sieb. & Zucc. Lilac Daphne. DeForest, Hodenpyl, Havemeyer.
Daphne Mezereum L. February Daphne. Havemeyer.

- Daphne odora* Thunb. Winter Daphne. Havemeyer.
Dirca palustris L. Leatherwood or wicopy. Bailey, Willys,
Hicks.

ELAEAGNACEAE.

- Elaeagnus angustifolia* L. Russian Olive. Bailey, Hodenpyl,
Hicks.
Elaeagnus argentea Pursh. Silverberry. Hodenpyl.
Elaeagnus fruitlandi Hort. Hodenpyl.
Elaeagnus longpipes Gray. (*E. multiflora* Thunb.) Cherry
Elaeagnus. Bailey, Matheson, DeForest, Hodenpyl, Hicks,
Pratt.
Elaeagnus pungens Thunb. Thorny Elaeagnus. Hodenpyl.
Elaeagnus umbellata Thunb. Autumn Elaeagnus. Bailey, Ho-
denpyl.
Hippaphaë rhamnoides L. Common Sea Buckthorn. Bailey,
Matheson, Hodenpyl.
Shepherdia argentea Nutt. Silver Buffalo Berry. Bailey.

LYTHRACEAE.

- Lagerstroemia* Sp? Crape Myrtle. Bailey.
Lythrum Salicaria L. Purple Loose Strife. Hicks, Matheson,
Hodenpyl. Var. *roscum* Hort. (Rose Loose Strife), Mathe-
son, DeForest, Hodenpyl.

PUNICACEAE.

- Punica Granatum* L. Pomegranate. Bailey, DeForest.

MYRTACEAE.

- Pimenta officinalis* Berg. Allspice. DeForest.

MELASTOMACEAE.

- Medinilla magnifica* Lindl. Tiffany.
Rhexia virginica L. Common Meadow Beauty. Hodenpyl.

ONAGRACEAE.

- Clarkia elegans* Dougl. Bailey, Tiffany.
Epilobium angustifolium L. Fireweed. Hodenpyl.
Fuchsia speciosa Hort. (*F. hybrida* Voss) Common Fuchsia.
Tiffany, Kahn, Pratt; var. *magellanica corallina* (Coral
Fuchsia), Willys.

Godetia sp? Bailey.

Oenothera biennis L. Common Evening Primrose. Bailey.
Var. *grandiflora* Lindl. (*Lamarckiana* Serg.), Bailey, Hodenpyl.

Oenothera brachycarpa Gray. Tiffany, Hodenpyl.

Oenothera caespitosa Nutt. Tufted Evening Primrose. Hodenpyl.

Oenothera fruticosa L. Sundrops. Havemeyer; var. *Youngi* Hort. Young's Sundrops. Matheson, Hodenpyl, DeForest, Hicks, Country Life Press.

Oenothera glauca Michx. Pratt. Var. *Fraseri* Hort. Fraser Sundrops. DeForest.

Oenothera Missouriensis Sims. Ozark Sundrops. DeForest.

Oenothera speciosa Nutt. Hodenpyl.

HALORRAGADACEAE.

Gunnera chilensis Lam. Chilean Gunnera. Hodenpyl.

ORDER XXX. UMBELLIFLORAE (UMBELLALES).

ARALIACEAE.

Acanthopanax divaricatum Seem. Hodenpyl.

Acanthopanax pentaphyllum March. Matheson, DeForest, Bailey, Hicks, Havemeyer.

Acanthopanax ricinifolium Seem. Castor-Aralia. Hodenpyl, Bailey, Hicks; var. *Maximowiczii* Hort. Bailey.

Aralia chinensis L. Chinese Angelica. Havemeyer; var. *mandschurica* Rehd. Bailey.

Aralia cordata Thunb. Udo. Hicks, Matheson, Hodenpyl.

Aralia nudicalis L. Wild Sarsaparilla. Hodenpyl.

Aralia racemosa L. American Spikenard. Hodenpyl.

Aralia spinosa L. Hercules Club. Hodenpyl, Bailey, Hicks, Havemeyer.

Fatsia japonica Decne and Planch. Tiffany, Bailey.

Hedera helix L. True English Ivy. Bailey, Tiffany, Kahn, Havemeyer, DeForest, Hodenpyl, Hicks, Willys.

Panax quinquefolium L. American Ginseng. Hodenpyl, Bailey.

UMBELLIFERAE.

- Aegopodium Podagraria* L. Goutweed. Kahn.
Daucus Carota L. var. *sativa* DC. Cultivated Carrot. C. S. H. vicinity.
Eryngium alpinum L. Blue Top Eryngo. Havemeyer.
Eryngium amethystinum L. Amethyst Eryngo. Bailey, Country Life Press.
Eryngium maritimum L. Seaholly. Bailey, Matheson.
Ferula communis L. Giant Fennel. Hodenpyl.
Heracleum villosum Fish. Caucasian Cow Parsnip. DeForest, Hodenpyl.
Myrrhis odorata Scop. Myrrh. Havemeyer.

CORNACEAE.

- Aucuba japonica* Thunb. Havemeyer, Pratt; var. *variegata* Hort. Gold dust Acuba. Matheson.
Cornus alba L. Tartarian Dogwood. Tiffany, Willys, Kahn, DeForest, Hodenpyl, Bailey; var. *sibirica* Lodd. Hodenpyl, Matheson; var. *argenteo marginata* Hort. Bailey.
Cornus alternifolia L. Pagoda Dogwood. Hodenpyl, Pratt.
Cornus Arnoldiana Hort. Hodenpyl.
Cornus Amomum Mill. Silky Dogwood. Hodenpyl.
Cornus brachypoda Auth. Hodenpyl, Hicks.
Cornus Canadensis L. Bunch Berry. Bailey, Hodenpyl.
Cornus controversa Hemsl. Giant Dogwood. Hodenpyl.
Cornus florida L. Flowering Dogwood. Bailey, Hodenpyl, Matheson, Kahn, DeForest, Hicks, Havemeyer, Pratt; var. *rubra* Hort. DeForest, Hodenpyl, Bailey, Matheson.
Cornus Kousa Buerger. Kousa Dogwood. Bailey, DeForest, Hodenpyl, Hicks, Havemeyer, Pratt.
Cornus mas L. Cornelian Cherry. Matheson, Bailey, DeForest, Hodenpyl, Hicks, Havemeyer; var. *aureo-elegantissima* Hort. Bailey.
Cornus officinalis Sieb. and Zucc. Japanese Cornelian Cherry. Matheson.
Cornus paniculata L'Herit. Gray Dogwood. Hodenpyl, Hicks.

- Cornus paucinervis* Hance. Littleleaf Dogwood. Bailey, Hodenpyl, Hicks.
Cornus rugosa Lam. Roundleaf Dogwood. Hodenpyl.
Cornus sanguinea L. Blood Twig Dogwood. Tiffany, Matheson, DeForest, Hodenpyl, Hicks, Bailey, Havemeyer.
Cornus stolonifera Michx. Red osier Dogwood. Matheson, DeForest, Hodenpyl, Tiffany, Bailey, Hicks, Pratt, Havemeyer.
Cornus zanthocarpa forma nova Hort. Hodenpyl.
Davidia involucrata Baill. Dove Tree. Bailey.
Nyssa sylvatica Marsh. Tupelo. Bailey, Willys, Hodenpyl, Hicks.

SUB-CLASS. METACHLAMYDEAE (SYMPETALAE).

ORDER I. ERICALFS.

DIAPENSIACEAE.

- Galax aphylla* L. Galax. DeForest, Hodenpyl.
Shortia galacifolia Torr. and Gray. Oconee Bells. DeForest, Bailey, Hicks, Hodenpyl.

CLETHRACEAE.

- Clethra acuminata* Michx. Cinnamon Clethra. Hicks.
Clethra alnifolia L. Sweet Pepperbush. Matheson, Hicks, DeForest, Hodenpyl, Pratt.

ERICACEAE.

- Arbutus Unedo* L. Strawberry Tree. Havemeyer.
Arctostaphylos Uva-ursi Spreng. Bear Berry. DeForest, Bailey, Hicks, Havemeyer, Country Life Press.
Azalea arborescens Pursh. Sweet Azalea. Bailey, Hodenpyl, DeForest, Hicks.
Azalea calendulacea Michx. (*Rhododendron calendulaceum* Torr.) Flame Azalea. Bailey, Hodenpyl, DeForest, Hicks, Havemeyer.
Azalea Gandavensis Hort. Ghent Azalea. Bailey, Hicks, Westbury.
Azalea indica L. (*Rhododendron indicum* Sweet) Bailey, Hicks, Havemeyer, Pratt; var. *rosiflora* Rehd. (*balsaminiflora*

- Carr.) Pratt; var. *amoena* Hort., Tiffany, DeForest, Hodenpyl, Hicks; var. *fujimange*, Country Life Press; var. *Kaempfferi* Rehder, Japanese Mountain Azalea. DeForest, Hodenpyl, Bailey, Hicks, Country Life Press.
- Azalea japonica* Gray (*Rhododendron japonicum* Suringar) Japanese Azalea. DeForest, Hodenpyl, Bailey, Tiffany, Hicks, Havemeyer.
- Azalea ledifolia* Hook (*Rhododendron mucronatum* Don.) Willys, DeForest, Hodenpyl, Bailey, Kahn, Havemeyer; var. *rosea pallida* Hort., Country Life Press.
- Azalea linearifolia* Hook. Spider Azalea. Hodenpyl; var. *macrocephalum forma decandrum* Hort. Hodenpyl.
- Azalea loisleuria* Hort. Hodenpyl.
- Azalea macrocephalum* Hort. Hodenpyl.
- Azalea mollis* Blume. (*Rhododendron molle* Don.) Chinese Azalea. DeForest, Tiffany, Hodenpyl, Bailey, Hicks, Havemeyer.
- Azalea mucronulatum* Turcz. var. *ciliatum* Hort. Hodenpyl.
- Azalea nudiflora* L. (*Rhododendron nudiflorum* Torr.) Pinxterbloom. Matheson, DeForest, Hodenpyl, Bailey, Hicks, Pratt, Country Life Press; var. *canescens* Rehder, Piedmont Azalea. Bailey, Hodenpyl, DeForest, Hicks.
- Azalea oblongifolium* Hort. Hodenpyl.
- Azalea obtusa* Lindl. Hiryu Azalea. Hodenpyl. Var. *kiusiana* Hort., Kyushu Azalea. Bailey, Hicks; var. *hinodegiri* Hort., Hinodegiri Azalea. Bailey, Hodenpyl, DeForest, Hicks, Country Life Press.
- Azalea occidentalis* Torr. & Gray (*Rhododendron occidentale* Gray), Havemeyer.
- Azalea pontica* L. (*Rhododendron luteum* Sweet) Pontic Azalea. Bailey, Hodenpyl, Havemeyer; var. *yodogawa* Rehd. Bailey, DeForest, Hicks.
- Azalea poukhanensis* Korean Azalea. Bailey, Hodenpyl, Hicks.
- Azalea prunifolium* Hort. Hodenpyl.
- Azalea Schlippenbachii* Kuntze (*Rhododendron Schlippenbachii* Maxim) Royal Azalea. Bailey, Hodenpyl, DeForest, Hicks, Havemeyer.
- Azalea rustica flore pleno* Hort. Hodenpyl.

- Azalea Tchonoskii* Hort. Hodenpyl.
- Azalea Vaseyi* Rehd. (*Rhododendron Vaseyi* Gray) Pinksheil Azalea. Bailey, Hodenpyl, Matheson, DeForest, Hicks, Havemeyer, Country Life Press.
- Azalea viscosa* L. (*Rhododendron viscosum* Torr.) Swamp Azalea. Bailey, Hodenpyl, Tiffany, DeForest, Matheson, Hicks, Havemeyer.
- Azalea Weyrichii* Hort. Hodenpyl.
- Azalea*—Horticultural varieties—*Altaclare (mollis x viscosa)*, Hodenpyl; *Louisa Hunnewell*, Hodenpyl, DeForest; *Firefly*, Country Life Press.
- Calluna vulgaris* Salisb. Scotch Heather. Hodenpyl, DeForest; var. *alba hammondi* Hort. Bailey, Hodenpyl, DeForest, Hicks, Matheson, Country Life Press; var. *Alporti* Kirchner, Alport Heather, DeForest; var. *rubra* Hort., Red Heather, Matheson; var. *scarlei*, Scarlet Heather, Hodenpyl; var. *rosca*, Country Life Press; var. *purpurea* Hort., Hodenpyl.
- Chamaedaphne calyculata* (L.) Moench. Hodenpyl, Bailey, Hicks, DeForest.
- Chimaphila maculata* (L.) Pursh. Striped Pipsissewa. DeForest, Hodenpyl.
- Chimaphila umbellata* (L.) Nutt. Common Pipsissewa. DeForest, Bailey.
- Chiogenes hispidula* Torr. and Gray. Hodenpyl.
- Enkianthus campanulatus* Nichols. Redvein Enkianthus. Bailey, Hodenpyl, DeForest, Hicks, Havemeyer.
- Enkianthus perulatus* Schneid. White Enkianthus. Bailey, Hodenpyl, DeForest, Havemeyer.
- Epigaea repens* L. Trailing Arbutus. DeForest, Hodenpyl, Bailey, Tiffany, Hicks, Havemeyer.
- Erica carnea* L. Spring Heath. Bailey, Matheson, DeForest, Havemeyer, Country Life Press; var. *alba* Hort., Country Life Press.
- Erica cinerea* L. Twisted Heath. DeForest.
- Erica mediterranea* L. Biscay Heath. Hodenpyl, Hicks, Havemeyer.

- Erica stricta* Donn. Corsican Heath. Havemeyer.
Erica Tetralix L. Crossleaf Heath. Havemeyer.
Erica vagans L. Cornish Heath. DeForest, Hodenpyl.
Gaultheria procumbens L. Wintergreen. DeForest, Hodenpyl, Hicks.
Gaultheria Shallon Pursh. Salal. Hodenpyl
Gaylussacia baccata (Wang) C. Koch. Black Huckleberry. Hicks.
Gaylussacia brachycera (Michx.) Gray Box Huckleberry. DeForest, Hodenpyl, Hicks, Country Life Press.
Kalmia angustifolia L. Lambkill. Hicks, Havemeyer, Country Life Press.
Kalmia latifolia L. Mountain Laurel. Tiffany, Matheson, C. S. H., Bailey, Kahn, DeForest, Hodenpyl, Hicks, Havemeyer, Pratt, Country Life Press.
Kalmia polifolia Wang. (*K. glauca* Ait.) Bog Kalmia. DeForest, Hodenpyl, Havemeyer.
Ledum groenlandicum Oeder. True Labrador Tea. Bailey, Hodenpyl, Hicks.
Ledum palustre L. Crystal Tea. Hodenpyl.
Leiophyllum buxifolium Ell. (*Ledum buxifolium* Berg.), DeForest, Hodenpyl, Country Life Press. Var. *prostratum* Gray, Allegheny Sand Myrtle, Willys, Hodenpyl, Country Life Press; var. *Hugerii* Hort., Hodenpyl.
Leucothoe axillaris Dcn. Havemeyer, Country Life Press.
Leucothoe Catesbaei Gray. Drooping Leucothoe. Bailey, Tiffany, Hodenpyl, Matheson, DeForest, Hicks, Havemeyer, Pratt, Country Life Press.
Leucothoe populifolia Dipp. DeForest.
Oxydendrum arboreum DC. Sour Wood. DeForest, C. S. H. station, Bailey, Hicks, Havemeyer.
Pernetia mucronata Gaud. Havemeyer.
Pieris floribunda Benth. Mountain Andromeda. Matheson, DeForest, Hodenpyl, Tiffany, Bailey, Hicks, Havemeyer, Country Life Press.
Pieris japonica D. Donn. Japanese Andromeda. Matheson,

- Hodenpyl, DeForest, Tiffany, Bailey, Hicks, Havemeyer, Pratt, Country Life Press.
- Pieris mariana* L. D. Don., Hodenpyl, Hicks.
- Pyrola asarifolia* Michx. var. *incarnata* (Fisch) Fernald. Hodenpyl.
- Pyrola rotundifolia* Man. (*P. Americana* Sweet) European Pyrola. Hodenpyl.
- Pyrola umbellata* Hort. Hodenpyl.
- Rhododendron arboreum* Sm. Tree Rhododendron. Havemeyer.
- Rhododendron carolinianum* Rehd. Carolina Rhododendron. Willys, Tiffany, Matheson, DeForest, Hodenpyl, Hicks, Havemeyer. Var. *album* Hort. (White Carolina Rhododendron) Matheson, DeForest, Hodenpyl.
- Rhododendron arbutifolium* Hort. Wilson's Rhododendron. Country Life Press.
- Rhododendron catawbiense* Michx. Catawba Rhododendron. Matheson, Tiffany, DeForest, Hodenpyl, Hicks, Havemeyer.
- Rhododendron ferrugineum* L. Rock Rhododendron. DeForest, Hodenpyl, Bailey.
- Rhododendron hirsutum* L. Garland Rhododendron. DeForest, Hodenpyl.
- Rhododendron maximum* L. Great Laurel. DeForest. Laboratory grounds C. S. H., Hodenpyl, Hicks, Havemeyer, Pratt.
- Rhododendron micranthum* Turcz. Manchurian Rhododendron. Havemeyer.
- Rhododendron minus* Michx. Piedmont Rhododendron. DeForest, Hodenpyl, Country Life Press.
- Rhododendron ponticum* L. Pontic Rhododendron. Havemeyer.
- Rhododendron racemosum* Franch. Mayflower Rhododendron. DeForest.
- Rhododendron rubiginosum* Franch. Bailey.
- Rhododendron Tachonoskii* Maxim. Hodenpyl.
- Rhododendrum* horticultural varieties:
- Abraham Lincoln. Bailey.
- Album Elegans. Cat., DeForest, Hodenpyl.
- Boule de Neige. Cat., DeForest, Hodenpyl.
- H. W. Sargent. Hodenpyl.

- Caractacus*. Cat. DeForest, Hodenpyl.
Charles Bagley. Cat. Hodenpyl.
Charles Dickens. Cat. DeForest, Hodenpyl.
C. S. Sargent. Cat. DeForest.
Daphne. (*Ferrugineum* x *carolinanum*) Hodenpyl.
Delicatissimum. (*Maximum* x *catawbiense*). DeForest, Hodenpyl.
E. S. Rand. Cat. Hodenpyl.
Everest Cat. DeForest, Hodenpyl.
F. D. Godman. Cat. Hodenpyl.
General Grant. Cat. Hodenpyl.
Giant Cat. Hodenpyl.
Henrietta Sargent. Cat. DeForest.
H. N. Hunnewell. Cat. Hodenpyl.
H. W. Sargent. Cat. DeForest.
Kettledrum. Cat. DeForest, Hodenpyl.
Lady Armstrong. Cat. DeForest, Hodenpyl.
Lady Clermont Cat. DeForest.
Mrs. Milner. Cat. Hodenpyl.
Parsons Grandiflorum. Cat. DeForest, Hodenpyl.
Purpureum Elegans. Cat. Hodenpyl.
Wilson Rhododendron (*Ferrugineum* x *minus*) DeForest, Hodenpyl.
pyl.
Rhodora canadensis L. (*Rhododendron canadense* L. B. S. P.
Rhodora), Bailey, DeForest, Hodenpyl, Hicks.
Vaccinium arboreum Marshall. Hodenpyl.
Vaccinium corymbosum L. High Bush. DeForest, Hodenpyl,
Bailey, Hicks, Havemeyer; var. *pallidum* Gray. Blue Ridge
Blueberry. Hodenpyl.
Vaccinium macrocarpon Ait. Cranberry. DeForest, Hodenpyl,
Bailey.
Vaccinium ovatum Pursh. Box Blueberry. DeForest.
Vaccinium pennsylvanicum Lam. Low Blueberry. Bailey,
Hempstead Plain, Hodenpyl, Havemeyer.
Vaccinium stamineum L. Deerberry. Hodenpyl, Havemeyer.
Vaccinium vacillans Kalm. Dryland Blueberry. Hodenpyl.
Vaccinium Vitis Idaea L. Cowberry Mountain Cranberry.
DeForest, Hodenpyl, Havemeyer, Country Life Press; var.
buxifolia Hort.; *major* Hort. and *ovatum* Hort. Hodenpyl.
Zenobia pulverulenta Pollard. Dusty Zenobia. Havemeyer,
Country Life Press.

ORDER II. PRIMULAIES.

MYRSINACEAE.

Ardisia crenulata Lodd. (*A. crispa* A. D. C.) Coral Ardisia. Tiffany.

PRIMULACEAE.

Anagallis arvensis L. Poor Man's Weatherglass. Carnegie Institution, C. S. H.

Androsace lanuginosa Wall. Rock Jasmine. Havemeyer.

Androsace sarmentosa Wall. Havemeyer.

Cyclamen persicum Mill. (*C. indicum* L.) Persian Cyclamen. Willys.

Dodecatheon Meadia L. Common Shooting Star. Bailey, Hodenpyl, Pratt.

Lysimachia clethroides Duby. Lizard's Tail. Hodenpyl, Matheson, Pratt, DeForest.

Lysimachia Nummularia L. Moneywort. Matheson, C. S. H. vicinity.

Primula acaulis Hill (*P. vulgaris* Huds.) English Primrose. Bailey, Matheson, DeForest, Hodenpyl, Havemeyer.

Primula Auricula L. Auricula. Havemeyer.

Primula elatior Hill. Oxlip Primrose. Hicks.

Primula japonica Gray. Japanese Primrose. Havemeyer, Country Life Press.

Primula malacoides Franch. Fairy Primrose. Kahn, Willys.

Primula obconica Hance. Top Primrose. Tiffany, Willys.

Primula polyantha Mill. Polyanthus Primrose. Hicks, Havemeyer.

Primula pulverulenta Duthie. Silverdust Primrose. Havemeyer.

Primula Sieboldi Morr. Siebold Primrose. Havemeyer.

Primula Sinensis Lindl. Chinese Primrose. Tiffany.

Primula veris L. Cowslip Primrose. Bailey, Tiffany, Matheson, Kahn, Hicks, Havemeyer.

Steironema ciliatum (L.) Raf. Hodenpyl.

Tritionalis americana (Pers.) Pursh. American Starflower. Hodenpyl.

ORDER III. PLUMBAGINALES.

PLUMBAGINACEAE.

- Ceratostigma carpentae* Hort. Lady Carpent's Leadwort.
Country Life Press.
- Ceratostigma plumbaginoides* Bunge. Larpente Plumbago.
Hodenpyl, Tiffany, Matheson, DeForest, Bailey, Hicks.
- Limonium (Statice) latifolium* Kintze. Bigleaf Sea Lavender.
Hodenpyl, Matheson, DeForest, Bailey, Pratt, Havemeyer,
Country Life Press.
- Limonium (Statice) Suworowi* Kuntze. Bailey, Pratt.
- Limonium (Statice) tataricum* var. *angustifolium* Hubb.
Lanceleaf Sea Lavender. DeForest.
- Plumbago capensis* Thunb. Havemeyer.
- Statice Armeria* L. Common Thrift. Tiffany, DeForest, Ho-
denpyl; var. *lauchcana* Hubb. Country Life Press; var.
alba Hort. Country Life Press.

ORDER IV. EBENALES.

SAPOTACEAE.

- Achras Zapota* (*Sapota Achras* Mill.) Sapodilla. Matheson.

EBENACEAE.

- Diospyros virginiana* L. Persimmon. C. S. H. vicinity, Mathe-
son, Hodenpyl, Hicks.

STYRACACEAE.

- Halesia monticola* Hort. Mountain Silverbell. Hicks.
- Halesia tetraptera* L. (*H. carolina* L.) Great Silverbell. Hicks,
DeForest, Hodenpyl, Havemeyer, Pratt.
- Pterostyrax hispida* Sieb. & Zucc. Fragrant Epaulette Tree.
Bailey, Hodenpyl, Hicks.
- Styrax japonica* Sieb. & Zucc. Japanese Snowbell. DeForest,
Bailey, Matheson, Davenport, Hodenpyl, Hicks, Havemeyer,
Country Life Press.
- Styrax Obassia* Sieb. & Zucc. Fragrant Snowbell. Bailey,
Hicks, Havemeyer, Dana Island.

Symplocos paniculata Wall. (*S. crataegoides* Buch.) Asiatic Sweetleaf. Hodenpyl, Hicks, Bailey.

ORDER V. CONTORTAE (GENTIANALES).

OLEACEAE.

- Chionanthus retusa* Lindl. Chinese Fringe Tree. Hodenpyl.
Chionanthus virginica L. White Fringe Tree. Havemeyer, Matheson, Willys, Hodenpyl, Bailey, DeForest, Dana Island.
Forsythia europaea Deg. and Bald. Albanian Forsythia. Hodenpyl.
Forsythia intermedia Zabel. Havemeyer; var. *primulira* Hort. Havemeyer.
Forsythia ovata Hort. Hodenpyl.
Forsythia suspensa Vahl. Golden Bell. Matheson, Kahn, DeForest, Hodenpyl, Hicks, Havemeyer, Pratt. Davenport, C. S. H.; var. *Fortunei* Rehder (Fortune Forsythia), Bailey, Matheson, Tiffany, Kahn, Hodenpyl, DeForest, Hicks; var. *primulina* Hort. (Primose Forsythia), Hodenpyl.
Forsythia viridissima Lindl. Greenstem Forsythia. Havemeyer, Pratt, Willys, DeForest, Matheson, Hodenpyl, Tiffany, Hicks.
Fraxinus americana L. White Ash. Fish hatchery, C. S. H., Matheson, Bailey, Hodenpyl, Hicks.
Fraxinus americana var. *accidosium* Shull. Huntington Road, C. S. H.
Fraxinus Bungeana DC. Bailey.
Fraxinus cuspidata Torr. Fragrant Ash. Bailey.
Fraxinus excelsior L. European Ash. Matheson, Bailey.
Fraxinus Ornus L. Flowering Ash. Bailey, Havemeyer.
Jasminum Beesianum Forrest & Diels. Rosy Jasmine. Havemeyer.
Jasminum nudiflorum Lindl. Winter Jasmine. Hicks, DeForest.
Ligustrum amurense Carr. Amur Privet. Bailey, Hicks.
Ligustrum excelsum superbum Hort. Silverleaf Privet. Bailey.

- Ligustrum Ibota* Sieb. Ibota Privet. DeForest, Hodenpyl, Hicks; var. *Regelianum* Rehd. (Regel Privet), Matheson, Hicks.
- Ligustrum japonicum* Thunb. Japanese Privet. C. S. H. vicinity.
- Ligustrum lucidum* Ait. var. *superbum* Hort. Silverleaf Privet. Bailey.
- Ligustrum ovalifolium* Hassk. California Privet. Tiffany, Matheson, DeForest, Hicks.
- Ligustrum vulgare* L. Common Privet. Matheson, Hicks, Blackford Hall, C. S. H. Tiffany, Willys.
- Osmanthus Aquifolium* Sieb. Holly Osmanthus. Havemeyer.
- Syringa affinis* L. Henry Early Lilac. Bailey, Willys; var. *Giraldi* Hort. (Purple Early Lilac), Willys, Tiffany, Bailey.
- Syringa Amurensis* Rupr. Amurian Lilac. Havemeyer, Hodenpyl, Davenport, C. S. H. vicinity.
- Syringa Chinensis* Willd. Chinese Lilac. Havemeyer.
- Syringa formosissima* Hort. Hodenpyl.
- Syringa japonica* Decne (*S. amurensis*, var. *japonica* Franch & Sav.) Japanese Tree Lilac. Bailey, Matheson, DeForest, Hodenpyl.
- Syringa Josikaea* Jacq. Hungarian Lilac. Bailey, Matheson, Hodenpyl, Havemeyer.
- Syringa Julianae* Schneid. Juliana Lilac. Hodenpyl.
- Syringa Kamibayaski* Hort. Hodenpyl.
- Syringa komarovi sargentiana* Hort. Sargent Liliac. Hodenpyl.
- Syringa pekinensis* Rupr. (*S. amurensis* var. *pekinensis* Maxim.) Peking Lilac. Hodenpyl.
- Syringa persica* L. Persian Lilac. Bailey, Matheson, Hicks, Havemeyer, Pratt.
- Syringa pubescens* Turcz. Hairy Lilac. Hodenpyl.
- Syringa reflexa* Hort. Nodding Lilac. Hodenpyl, Hicks.
- Syringa sweginzowi* Hort. Chengtu Lilac. Hodenpyl.
- Syringa velutina*. Hodenpyl.
- Syringa villosa* Vahl. Late Lilac. Bailey, Hodenpyl, Hicks, Havemeyer, Pratt; var. *emodi* Rehd. Himalaya Lilac. Matheson, Hicks.

Syringa vulgaris L. Common Lilac. Tiffany, Willys, Fish hatchery, C. S. H., Matheson, Hicks, Havemeyer, Pratt; var. *alba* Hort. (Common White Lilac), Willys.

Syringa Wilsoni Hort. Wilson Lilac. Hodenpyl.

Syringa Wolfi Hort. Wolf Lilac. Hodenpyl.

Syringa yunnanensis Hort. Yunnan Lilac. Hodenpyl.

Syringa vulgaris—horticultural varieties:

Alphonse Lavallee. Hodenpyl.

Charles Joly. Hodenpyl.

Comtesse Horace de Choiseul. Hodenpyl.

Condorcet. Hodenpyl.

de Humboldt. Hodenpyl.

De Groncels. Hodenpyl.

Doyen Keteleer. Hodenpyl.

Frau Bertha Dammann. Hodenpyl.

Geheimrat Singelmann. Hodenpyl.

Glorie de Lorraine. Hodenpyl.

Jacques Callot. Hodenpyl.

Jean Bart. Hodenpyl.

La Mauve. Hodenpyl.

La Tour d'Auvergne. Hodenpyl.

La Marck. Hodenpyl.

Linne. Hodenpyl.

Louis Van Houtte. Hodenpyl.

Louvain. Hodenpyl.

Ludwig Spaeth. Hodenpyl.

Marechal de Bassompierre. Hodenpyl.

Marie Legraye. Hodenpyl.

Monument Carnot. Hodenpyl.

President Grevy. Hodenpyl.

Prince de Beauvau. Hodenpyl.

Prince of Wales. Hodenpyl.

Professor Sargent. Hodenpyl.

Red Marly. Hodenpyl. --

Rouge de Trianon. Hodenpyl.

Senateur Volland. Hodenpyl.

Thibaut. Hodenpyl.

Virginalis. Hodenpyl.

LOGANIACEAE.

- Buddleia asiatica* Lour. White Butterfly Bush. Bailey, Willys, Kahn, Havemeyer, Pratt.
Buddleia Davidi Franch. Havemeyer, Pratt. Var. *magnifica* Rehd. & Wils. Oxeye Butterfly Bush. Hodenpyl, Havemeyer, Country Life Press; var. *superba* Rehd. & Wils. Hodenpyl, Bailey, DeForest, Willys, Hicks; var. *Veitchiana* Rehd. Veitch Butterfly Bush. Hodenpyl, Bailey, Tiffany, Kahn, DeForest; var. *Wilsonii* Rehd. & Wilson. Wilson Butterfly Bush. Hodenpyl; var. "Eva Dudley," Hodenpyl.
Buddleia officinalis Maxim. Matheson, Kahn, Hoenpyl.
Buddleia Farquharii Hort. Hodenpyl.
Spigelia marilandica L. Pinkroot. Hodenpyl.

GENTIANACEAE.

- Gentiana acaulis* L. Stemless Gentian. Hodenpyl.
Gentiana Andrewsii Griseb. Closed Gentian. DeForest, Hoenpyl.
Gentiana asclepiadea L. Milkweed Gentian. Hodenpyl.
Gentiana crinita Froel. Fringed Gentian. Hodenpyl.
Mengyanthes trifoliata L. Common Bogbean. Hodenpyl.

APOCYNACEAE.

- Allamanda cathartica* L. Common Allamanda. Tiffany.
Nerium sp? Oleander. Tiffany, Matheson.
Nerium Oleander L. Oleander. DeForest.
Vinca major L. Blackford Hall. C. S. H.
Vinca minor L. Common Periwinkle. Bailey, Tiffany, Matheson, Kahn, DeForest, Hodenpyl, Hicks, Pratt.
Vinca rosea L. Madagascar Periwinkle. C. S. H. vicinity.
Vinca virginica Hort. Hodenpyl.

ASCLEPIADACEAE.

- Asclepias curassavica* L. Blood-Flower. DeForest.
Asclepias incarnata L. Swamp Milkweed. Hodenpyl, Bailey.
Asclepias pulchra Ehrh. Hairy Milkweed. Hodenpyl.
Asclepias tuberosa L. Butterfly Weed. DeForest, Hodenpyl, Bailey, Tiffany, Hicks, Country Life Press.
Stephanotis floribunda Brongh. Tiffany.

ORDER VI. TUBIFLORAE (POLEMONIALES).

CONVOLVULACEAE.

- Convolvulus aureus* Hort. Golden Convolvulus. Tiffany.
Convolvulus japonicus Thunb. Small Rutland Beauty. Hicks.
Convolvulus sepium L. Rutland Beauty. C. S. H. vicinity.

POLEMONIACEAE.

- Cobaea scandens* Cav. "Cup and Saucer Plant." Pratt, C. S. H. vicinity.
Gilia capitata Dougl. Globe Gilia. Bailey.
Phlox amoena Sims. Amoena Phlox. Tiffany, DeForest, Hodenpyl, Hicks, Country Life Press.
Phlox Arendsii Hort. Havemeyer.
Phlox canadensis. Country Life Press. Var. "Perry's" Hort., La Phaine Hort. Country Life Press.
Phlox divaricata L. Blue Phlox. Matheson, DeForest, Hodenpyl, Hicks, Havemeyer.
Phlox Drummondii Hook. Drummond Phlox. Bailey, Pratt, Tiffany.
Phlox glaberrima var. *suffruticosa* Gray. Matheson, DeForest.
Phlox maculata L. (*P. decussata* Hort.) Sweet-William Phlox. Bailey, Tiffany, Willys, Hodenpyl.
Phlox orata L. Country Life Press.
Phlox paniculata L. Summer Perennial Plox. Havemeyer, Pratt.
Phlox multiflora A. Nelson. Hodenpyl.
Phlox subulata L. Moss Phlox. Tiffany, Matheson, DeForest, Hodenpyl, Hicks, Havemeyer, Pratt. Var. *alba* Hort., "Daisy Hill" Hort., *Ulcina* Hort., "ricid" Hort., "G. F. Wilson" Hort., *setacea* Hort., Country Life Press.
Phlox horticultural varieties:
Antonia Mercie. DeForest Country Life Press.
Bacchante. DeForest.
Coquelicot. DeForest, Hodenpyl.
Elizabeth Campbell. Matheson, DeForest, Country Life Press.
Eugene Danzanvilliers. DeForest.
Fran Antoine Buckner. Country Life Press.

Fraulein von Lassburg. DeForest, Country Life Press.

Le Mahal. Country Life Press.

Miss Lingard Suf. Matheson, DeForest, Country Life Press.

Mme. Paul Dutrie. Matheson, DeForest, Country Life Press.

Mont Blanc, Suf. DeForest.

Pantheon. DeForest, Hodenpyl.

Rijanstroom—Country Life Press.

Thor. DeForest.

Polemonium caeruleum L. Greek Valerian. Matheson, DeForest, Hodenpyl, Hicks, Havemeyer, Pratt.

Polemonium humile Willd. Dwarf Polemonium. Hodenpyl.

Polemonium reptans L. Creeping Polemonium. Hodenpyl, Havemeyer.

BORRAGINACEAE.

Anchusa Barrelieri Vilm. Early Bugloss. Hodenpyl.

Anchusa italica Retz. (*A. azurea* Mill.) Italian Bugloss. DeForest, Willys, Tiffany, Bailey, Hicks, Havemeyer, Pratt.
Var. "Dropmore Bugloss." Matheson, Bailey.

Anchusa myosotidiflora Lehm. Siberian Bugloss. DeForest, Havemeyer.

Echium vulgare L. Blue-Weed. Hodenpyl.

Heliotropium peruvianum L. Heliotrope. Bailey, Kahn.

Lithospermum canescens (Michx.) Lehm. Puccoon. Hodenpyl.

Mertensia ciliata Hort. Mountain Bluebells. Hodenpyl.

Mertensia virginica DC. Virginia Bluebells. Matheson, Hodenpyl, Havemeyer, Pratt.

Myosotis scorpioides L. Forget-Me-Not. DeForest, Havemeyer, Kahn, Hodenpyl, Hicks. Var: *semperflorens* Hort. (Dwarf Perpetual), Hodenpyl.

Myosotis sylvatica Hoffm. Woodland Forget-Me-Not. Var. *alpestris* Koch. Alpine Forget-Me-Not. Tiffany, DeForest, Bailey.

Omphalodes linifolia Moench. Hound's Tongue. Bailey, Matheson.

Omphalodes verna Moench. Venus button. DeForest, Hodenpyl.

VERBENACEAE.

- Callicarpa americana* L. var. *alba* Hort. White Beauty Berry. Bailey.
- Callicarpa japonica* Thunb. Japanese Beauty Berry. Bailey, Hodenpyl.
- Callicarpa purpurea* Juss. Chinese Beauty Berry. Bailey, Hodenpyl, Hicks.
- Caryopteris incana* Miq. Common Bluebeard. DeForest, Hodenpyl, Bailey, Hicks, Havemeyer, Pratt.
- Clerodendrum speciosum* Lem. Havemeyer.
- Clerodendrum trichotomum* Thunb. Harlequin Glorybower.
- Lantana Camara* L. Common Lantana. Kahn.
- Lantana flava* Hort. Yellow Lantana. Tiffany, Kahn.
- Lantana involucrata* L. DeForest.
- Lippia citriodora* HBK. Lemon Verbena. Bailey, Tiffany, Matheson, Kahn.
- Vitex Negundo* L. Negundo Chaste Tree. Bailey; var. *incisa* Clarke (Cutleaf Chaste Tree). Bailey.

LABIATAE.

- Ajuga reptans* L. Carpet Bugleweed. DeForest, Hodenpyl, Hicks, Pratt, Country Life Press. Var. *atropurpurea* Hort. Country Life Press.
- Coleus Blumei* Benth. Joseph's Coat. Border around Episcopal Church, C. S. H. Var. *Verschaffelti* Lem. Verschaffelt Coleus. Willys.
- Elsholtzia Stauntoni* Benth. Bailey, Hodenpyl.
- Lavandula Spica* L. Lavender. Pratt, Country Life Press.
- Mentha citrata* Ehrh. Bergamot Mint. C. S. H.
- Mentha piperita* L. Peppermint. Matheson.
- Mentha rotundifolia* Huds. Round-leaved Mint. C. S. H., near lakes.
- Monarda didyma* L. Oswego Tea. Matheson, DeForest, Hodenpyl, Hicks. Var. "Cambridge Scarlet," Country Life Press; var. *violacea superba* Hort. (Amaranth Bee Balm), *rosea* Hort. (Rose Bee Balm), *salmonea* Hort. (Salmon Bee Balm). Hodenpyl.

- Nepeta Cataria* L. Catnip. C. S. H., Pratt.
Nepeta hederacea Trev. Ground Ivy. Matheson, Hicks, Laboratory Grounds, C. S. H.
Nepeta Mussini Spreng. Bailey, Tiffany, Matheson, Kahn, DeForest, Havemeyer, Country Life Press.
Physostegia virginiana Benth. Virginia False Dragon Head. Matheson, Hodenpyl, Bailey, Hicks, DeForest, Pratt; var. *magnifica* Hort. Obedient plant. Country Life Press.
Prunella grandiflora Jacq. Great Selfheal. Hicks.
Salvia azurea Lam. Azure Salvia. Bailey, Tiffany, Matheson, Kahn, DeForest, Hicks, Pratt; var. *grandiflora* Benth. (Great Azures), Matheson, Hodenpyl.
Salvia farinacea Benth. Mealycup Sage. Bailey, Matheson, Kahn, Pratt.
Salvia leucantha Cav. Mexican Bush Sage. Matheson.
Salvia nemorosa Crantz. Blue or Violet Sage. Matheson, Country Life Press.
Salvia officinalis L. Garden Sage. Matheson.
Salvia patens Cav. Gentian Sage. Matheson, Kahn, Willys, Bailey.
Salvia pratensis L. Meadow Sage. DeForest, Hicks.
Salvia sclarea L. Common Clary. Matheson; var. *turkestanica* Hort. Country Life Press.
Salvia splendens Ker. Scarlet Sage. Willys, Bailey.
Stachys grandiflora Benth. DeForest; var. *robusta* Hort. Betony. Bailey, DeForest.
Stachys lanata Jacq. Woolly Betony. Matheson, Kahn, Pratt.
Stachys officinalis Franch. Common Betony. DeForest.
Teucrium Chamaedrys L. Chamaedrys Germander. Bailey, DeForest, Hodenpyl.
Thymus Serpyllum L. Mother-of-Thyme. Pratt; var. *albus* Hort. White Wild Thyme; var. *coccineus* Hort. Crimson Wild Thyme; var. *lanuginosus* Hort. Woolly Thyme; var. *citriodorus* Hort. Country Life Press.
Trichostema dichotomum L. Blue Curls. Hicks.
Thymus aphylla Hort. Country Life Press.

SOLANACEAE.

- Datura Stramonium* L. Jimson Weed. Carnegie Institution, C. S. H.
- Lycium barbarum* L. Barbary Matrimony Vine. Matheson, Willys, Bailey.
- Lycium chinense* Mill. Chinese Matrimony Vine. Hicks.
- Lycium halimifolium* Mill. Common Matrimony Vine. Bailey, Matheson.
- Lycopersicon esculentum* Mill. Tomato. Matheson. Var. *cor-
asiforme* Alef. Cherry Tomato. C. S. H. vicinity.
- Nicotiana alata* var. *affinis* Moore. Jasmine Tobacco. Bailey, Tiffany, Matheson.
- Nicotiana Sanderæ* Sander. Pratt.
- Nicotiana sylvestris* Spegaz & Comes. Kahn, Pratt.
- Nierembergia gracilis* Hook. Slender Cutflower. Havemeyer.
- Nierembergia rivularis* Miers. White Cup. Country Life Press.
- Petunia hybrida* Vilm. Common Garden Petunia. Willys, Tiffany, Pratt, Matheson.
- Physalis Alkekengi* L. Strawberry Ground Cherry. DeForest.
- Salpiglossis sinuata* Ruiz & Pav. Pratt, Kahn.
- Schizanthus retusus* Hook. Butterfly flower. Laughlin Garden, Pratt.
- Schizanthus wisetonensis* Low. Wiseton Butterfly Flower. Tiffany, Pratt.
- Solanum Capsicastrum* Link. Var. *Melvini* Melvin. Jerusalem Cherry. Tiffany, Willys.
- Solanum Melongena* L. Common Eggplant. Tiffany, Willys.
- Solanum Pseudocapsicum* L. Jerusalem Cherry. Tiffany, Bailey, Pratt.
- Solanum tuberosum* L. Potato. C. S. H. vicinity.

SCROPHULARIACEAE.

- Alonsoa Warscewiczii* Regel. Heartleaf Maskflower. Bailey.
- Antirrhinum majus* L. Large Snap Dragon. C. S. H. cultivated.
- Calceolaria frutico-hybrida* Voss. (*C. integrifolia* L.) Calceolaria. Tiffany, Willys.

- Castilleja coccinea* (L.) Spreng. Indian Paint Brush. Hodenpyl.
Chelone glabra L. White Turtlehead. Hodenpyl.
Chelone Lyoni Pursh. Pink Turtlehead. Hodenpyl, Hicks.
Cymbalaria muralis Gaertn. Kenilworth Ivy.
Digitalis ambigua Murr. Yellow Foxglove. Pratt.
Digitalis lanata Ehrh. Grecian Foxglove. Pratt.
Digitalis purpurea Linn. Foxglove, Hodenpyl, Hicks, Pratt,
DeForest. Var. *alba* Schrank (Common White Foxglove),
Tiffany, Hodenpyl, Hicks, Bailey; var. *gloxiniaeflora* Hort.
(Gloxinia Foxglove), Matheson, Hodenpyl.
Linaria cymbalaria Mills. Var. *alba* Hort. White Kenilworth
Ivy. Willys.
Linaria macedonica Grib. Macedonian Toadflax. Havemeyer.
Linaria vulgaris Mill. Common Toadflax. Hodenpyl.
Mazus japonicus Kuntze. Havemeyer.
Nemesia strumosa Benth. Pouched Nemesia. Pratt.
Paulownia tomentosa Steud. Royal Paulownia. Bailey, Hicks,
Havemeyer.
Pedicularis canadensis L. Early Wood Betony. Hodenpyl.
Pentstemon alpinus Torr. Hodenpyl.
Pentstemon barbatus Roth. Bailey, Matheson, DeForest, Ho-
denpyl, Hicks, Pratt.
Pentstemon Cobaea Nutt. Cocaea Pentstemon. Hodenpyl.
Pentstemon gloxinoides Hort. Gloxinia Pentstemon. Willys,
Matheson.
Pentstemon heterophyllus Lindl. Country Life Press.
Pentstemon hirsutus Willd. Eastern Pentstemon. Hodenpyl.
Pentstemon laevigatus Solander var. *digitalis* Gray. Foxglove
Pentstemon. DeForest, Hodenpyl.
Pentstemon spectabilis Thurb. Showy Pentstemon. Hodenpyl.
Pentstemon Torreyi Benth. Torrey Pentstemon. Hicks, Pratt.
Rehmannia angulata Hemsl. DeForest.
Verbascum phoeniceum L. Purple Mullein. Hodenpyl.
Veronica gentianoides Vahl. Gentian Speedwell. Hodenpyl.
Veronica noveboracensis Hort. Hodenpyl.
Veronica incana L. Woolly Speedwell. Bailey, Hodenpyl,
Havemeyer, Country Life Press.

- Veronica longifolia* L. Matheson, Hicks, Hodenpyl, DeForest, Bailey, Havemeyer, Pratt, Country Life Press; var. *subsessilis* Miq. Clump Speedwell. Matheson, DeForest, Hodenpyl, Hicks; var. *rosea* Hort. (Rosy Speedwell), Hodenpyl, Bailey.
- Veronica repens* DC. Creeping Speedwell. DeForest, Hicks, Bailey, Havemeyer, Pratt, Country Life Press.
- Veronica spuria* L. Bastard Speedwell. Matheson, Kahn, DeForest, Hicks.
- Veronica Teucrium* L. Hungarian Speedwell. DeForest; var. *prostrata* L., Havemeyer; var. *rupestris* Hort. (Rock Speedwell), Hodenpyl, Hicks, Havemeyer, Country Life Press.

BIGNONIACEAE.

- Bignonia caprolata* L. Cross Vine. Havemeyer.
- Bignonia grandiflora* Thunb. Chinese Trumpet Creeper. Matheson, Hodenpyl, Bailey.
- Bignonia radicans* L. Trumpet Creeper. Bailey, Hodenpyl, Tiffany, DeForest, Hicks.
- Campsis radicans* L. Seem. Trumpet Vine. Matheson.
- Catalpa bignonioides* Walt. Catalpa. Tiffany, DeForest, Hicks, Bailey, Pratt.
- Catalpa Bungei* C. A. May. Manchurian Catalpa. Willys, Hicks.
- Catalpa speciosa* Warder. Western Catalpa. Huntington Road, C. S. H., Matheson.
- Incarvillea delavayi* Bur. & Franch. DeForest.

GESNERIACEAE.

- Naegelia zebrina* Regel. Havemeyer.
- Sinningia speciosa* Benth & Hook. Common Gloxinia. Tiffany.

GLOBULARIACEAE.

- Globularia trichosantha* Fisch and Mey. Globe Daisy. Country Life Press.
- Kolkwitzia ambilis* Graebn. Hodenpyl, Hicks, Bailey.

ORDER VIII. RUBIALES.

RUBIACEAE.

- Asperula odorata* L. Sweet Woodruff. Matheson, DeForest.
Cephalanthus occidentalis L. Button Bush. Bailey, Hodenpyl,
Matheson, Hicks.
Galium Mollugo L. Wild Madder. C. S. H., Huntington Road,
Matheson.
Gardenia jasminoides Ellis var. *Fortuniana* Lindl. Veitch Cape
Jasmine. Kahn.
Mitchella repens L. Partridgeberry. DeForest, Matheson, Ho-
denpyl, Hicks.

CAPRIFOLIACEAE.

- Abelia chinensis* R. Br. Chinese Abelia. Bailey.
Abelia grandiflora Rehd. Havemeyer, Hodenpyl, DeForest,
Hicks.
Diervilla florida Sieb. & Zucc. Rose Weigela. Fish Hatchery
Grounds, C. S. H., near entrance, Matheson, DeForest, Tif-
fany, Bailey; var. *venusta* Hort. Hodenpyl.
Diervilla floribunda C. Moy. Crimson Weigela. Havemeyer.
Diervilla Lonicera Mill. Dwarf Bush Honeysuckle. Bailey,
Hodenpyl.
Diervilla praecox Le Moine. Early weigela. Hodenpyl.
Linnaea borealis L. Twin Flower. Hodenpyl.
Lonicera amona Zabel var. *Gotha* Hort. Hodenpyl; var. *ar-
noldiana* Hort. Hodenpyl.
Lonicera bella Zabel. Bell honeysuckle. Hodenpyl.
Lonicera caerulea L. Sweetberry Honeysuckle. Bailey, Hode-
npyl.
Lonicera chamisosi Hort. Hodenpyl.
Lonicera ciliosa Poir (L. *occidentalis* Hook), Hodenpyl.
Lonicera fragrantissima Lindl. Winter Honeysuckle. Hode-
npyl, DeForest, Hicks.
Lonicera giraldi Hort. Girald Honeysuckle. Hodenpyl.
Lonicera gracilipes Mig. Spangle Honeysuckle. Hodenpyl,
Bailey.

- Lonicera Heckrottii* Rehd. Everblooming Honeysuckle. Bailey, Hodenpyl.
- Lonicera Henryi* Hemsl. Henry Honeysuckle. Hicks, Hodenpyl, Bailey.
- Lonicera involucrata* Banks. Bearberry Honeysuckle. Hodenpyl, Bailey; var. *scrotina* Hort. Hodenpyl.
- Lonicera japonica* Thunb. Japanese Honeysuckle. Havemeyer, Pratt; var. *Halliana* Arb. Kew., Willys, Kahn Hodenpyl, Tiffany, Bailey.
- Lonicera Korolkovi* Stapf. Blue Leaf Honeysuckle. Hodenpyl, Bailey.
- Lonicera Ledebouri* Eschsch. Hodenpyl.
- Lonicera Mazeki* Maxim. Havemeyer. Var. *podocarpa* Hort. Late Honeysuckle. Hicks, Hodenpyl.
- Lonicera microphylla* Willd. Hodenpyl.
- Lonicera minutiflora* Zabel. Bunchberry Honeysuckle. Hodenpyl.
- Lonicera Morrowi* Gray. Morrow Honeysuckle. DeForest, Hodenpyl, Hicks, Bailey, Havemeyer.
- Lonicera muscaviensis* Moscow Honeysuckle. Hodenpyl.
- Lonicera nitida* Wils. Havemeyer, Hodenpyl, Pratt.
- Lonicera oblongifolia* Hook. Swamp Fly Honeysuckle. Hodenpyl.
- Lonicera pileata* Oliver. Privet Honeysuckle. Hodenpyl, Bailey, Havemeyer.
- Lonicera prostrata* Hort. Creeping Honeysuckle. Hodenpyl, Havemeyer.
- Lonicera Ruprechtiana* Regel. Manchurian Honeysuckle. Hicks.
- Lonicera sempervirens* L. Trumpet Honeysuckle. Hodenpyl, Hicks.
- Lonicera similis* Hemsl. Hodenpyl.
- Lonicera spinosa* Jacquemont. Thorn Honeysuckle. Hodenpyl.
- Lonicera Standishii* Carr. Standish Honeysuckle. Hicks.
- Lonicera syringantha* Maxim. Lilac Honeysuckle. Hicks, Bailey, Hodenpyl; var. *Wolfi* Rehd. (Wolf Honeysuckle), Bailey, Hodenpyl.
- Lonicera tangutica* Max. Blush Honeysuckle. Bailey, Hodenpyl.

- Lonicera tatarica* L. Tartarian Honeysuckle. Bailey, Havemeyer, Tiffany, Laboratory grounds, C. S. H., Matheson, DeForest, Hodenpyl, Hicks; var. *alba* Hort. (White Tartarian), Hodenpyl; var. *rosea* Hort. (Red Tartarian), Hodenpyl; var. *grandiflora* Rehd. (Bride H.), Hodenpyl; var. *tubriflora* DC.. (*sibirica* Hort.), Hodenpyl.
- Lonicera thibetica* Bureau and Franch. Tibetan Honeysuckle. Hodenpyl.
- Lonicera xylosteoides* Hort. Vienna Honeysuckle. Bailey.
- Sambucus callicarpa* Hort. Hodenpyl.
- Sambucus canadensis* L. American Elder. Tiffany, Pratt, Bailey, Matheson, DeForest, Hodenpyl, Hicks; var. *aurea* Hort. Tiffany, Bailey; var. *acutiloba* Hort. Cutleaf American Elder. Hodenpyl; var. *chlorocarpa* Hort. Greenberry Elder. Hodenpyl.
- Sambucus nigra* L. European Elder. Havemeyer.
- Sambucus pubens* Michx. Scarlet Elder. Bailey, Hodenpyl.
- Sambucus racemosa* L. European Red Elder. Hodenpyl.
- Symphoricarpos mollis* Gray (*S. acutus* Dipp.) Spreading Snowberry. Havemeyer.
- Symphoricarpos oreophilus* Gray. Mountain Snowberry. Hodenpyl.
- Symphoricarpos racemosus* Michx. (*S. albus* Blake) Common Snowberry. DeForest, Hodenpyl, Hicks, Bailey.
- Symphoricarpos vulgaris* Michx. (*S. orbiculatus* Moench). Coralberry. Bailey, Matheson, Hodenpyl, Hicks.
- Viburnum acerifolium* L. Dockmackie. Jones Woods, C. S. H., Bailey, DeForest, Hodenpyl, Havemeyer, Pratt.
- Viburnum americanum* Auth. (*V. trilobum* Marsh). American Cranberrybush. Bailey, Hicks.
- Viburnum burejaeticum* Herd. and Regel. Manchurian Viburnum. Hodenpyl.
- Viburnum Carlesii* Hemsl. Fragrant-Viburnum. Bailey, DeForest, Hodenpyl, Hicks, Havemeyer.
- Viburnum cassinoides* L. Withe-Rod. DeForest, Hodenpyl, Hicks, Havemeyer.
- Viburnum Davidii* Hort. Hodenpyl.

- Viburnum dentatum* L. Arrow-Wood. Bailey, Tiffany, C. S. H., DeForest, Hodenpyl, Hicks, Havemeyer.
- Viburnum dilatatum* Thunb. Linden Viburnum. Bailey, Matheson, DeForest, Hodenpyl, Havemeyer, Country Life Press.
- Viburnum erubescens* Hort. Hodenpyl.
- Viburnum ichogense* Hort. Hodenpyl.
- Viburnum japonicum* Spreng. Japanese Viburnum. DeForest.
- Viburnum Latana* L. Wayfaring Tree. Bailey, DeForest, Tiffany, Hodenpyl, Hicks, Havemeyer, Pratt; var. *rugosum* Hort. Wrinkleleaf Wayfaring Tree. Hodenpyl.
- Viburnum Lentago* L. Sheep Berry. Hodenpyl, DeForest, Bailey, Hicks, Havemeyer, Pratt.
- Viburnum macrocephalum* Fortune. Chinese Viburnum. Havemeyer.
- Viburnum molle* Michx. Kentucky Viburnum. Bailey, DeForest, Hodenpyl.
- Viburnum nepalense* Hort. Hodenpyl.
- Viburnum nudum* L. Smooth Withe-Rod. Bailey, Hodenpyl, Havemeyer; var. *angustifolium* Torr. and Gray.
- Viburnum odoratissimum* Ker. Sweet Viburnum. DeForest.
- Viburnum Opulus* L. European Cranberrybush. DeForest, Hodenpyl, Tiffany, Hicks, Bailey; var. *sterile* DC. Matheson, Hodenpyl; var. *xanthocarpum* Yellow Fruit Cranberry. Hodenpyl.
- Viburnum prunifolium* L. Black Haw. Bailey, DeForest, Hodenpyl.
- Viburnum pubescens* Pursh. Hodenpyl; var. *affine* (Missouri Viburnum), Hicks.
- Viburnum rhytidophyllum* Hemsl. Leatherleaf Viburnum. Bailey, Hicks, DeForest, Hodenpyl, Country Life Press.
- Viburnum Sargentii* Koehne. Sargent Cranberrybush. Hodenpyl.
- Viburnum Sieboldi* Miq. Siebold Viburnum. Matheson, DeForest, Hodenpyl, Havemeyer.
- Viburnum Tinus* L. Laurestinus. Pratt.

- Viburnum tomentosum* Thunb. Double File Viburnum. DeForest, Hodenpyl, Hicks, Havemeyer; var. *plicatum* Max. Bailey, Matheson, DeForest, Hodenpyl, Willys.
Viburnum utile Hemsl. Service Viburnum. Havemeyer.
Viburnum venosum Britt. Var. *Canbyi* Rehd. Canby Viburnum. Hicks.
Viburnum Wrighti Mig. Wright Viburnum. Hodenpyl, Hicks, Bailey.

VALERIANACEAE.

- Centranthus macrosiphon* Boiss. Spur Valerian. Matheson.
Centranthus ruber DC. Jupiters beard, Red Valerian. DeForest, Hodenpyl, Country Life Press.
Valeriana acutiloba Hort. Hodenpyl.
Valeriana officinalis L. Common Valerian. Matheson, DeForest, Hodenpyl, Hicks, Pratt; var. *alba* Hort., DeForest, Hodenpyl.

DIPSACACEAE.

- Scabiosa caucasia* Bieb. Caucasian Scabiosa. DeForest, Hodenpyl, Tiffany, Bailey, Havemeyer, Pratt.
Scabiosa japonica Miq. Mourning Bride. Bailey, Pratt.

ORDER IX. CUCURBITALES (CAMPANULALES).

CUCURBITACEAE.

- Cucumis sativus* L. Cucumber. Matheson.
Cucumis verrucosus Duchesne. Crooked Necked Squash. In cultivation, C. S. H.
Cucurbita moschata Duchesne. Winter Crookneck Squash. C. S. H.
Cucurbita Pepo L. Pumpkin. Gardens, C. S. H.

ORDER X. CAMPANULATAE (CAMPANULALES).

CAMPANULACEAE.

- Adenophora Potanini* Korsh. Bush Ladybell. Havemeyer.
Campanula carpatica Jacq. Carpathian Bell Flower. Bailey, Hodenpyl, Tiffany, DeForest, Kahn, Hicks, Havemeyer.

- Country Life Press. Var. *alba* Hort. White Carpathian Harebell. Country Life Press.
- Campanula garganica* Ten. Havemeyer.
- Campanula glomerata* L. Danes blood. Bailey, DeForest, Havemeyer.
- Campanula Grosseki* Heuff. Grosseck Bellflower. DeForest, Bailey.
- Campanula lactiflora* Bieb. Milky Bell Flower. Havemeyer; var. *alba grandiflora* Hort. White Tall Bell Flower. Country Life Press; var. "*E. Molyneaux*." Country Life Press.
- Campanula latifolia* L. Great Bell Flower. Havemeyer.
- Campanula latiloba* A. DC. Olympic Bell Flower. Hodenpyl, Bailey.
- Campanula macrostyla* Boiss & Heldr. Anatolian Bell Flower. Havemeyer.
- Campanula medium* L. Canterbury Bells. Bailey, Matheson, Willys, DeForest, Hicks, Pratt. Var. *calycanthema* Hort. Cup-ard-Saucer Bell Flower. Bailey, Willys.
- Campanula persicifolia* L. Peach Leaf Bell Flower. Matheson, Bailey, Hodenpyl, DeForest, Kahn, Tiffany, Hicks, Havemeyer, Pratt. Var. *Moecheimi* Hort. Double white peach leaved Bell Flower. DeForest, Hodenpyl, Country Life Press; var. "*Fairy Bell Flower*." Matheson; "*Telham Beauty*." Country Life Press.
- Campanula punctata* Lam. Spotted Bell Flower. DeForest. Var. "*Marian Gehring*." Country Life Press.
- Campanula pyramidalis* L. Chimney Bell Flower. Bailey, Hodenpyl, Tiffany, DeForest, Hicks, Havemeyer, Pratt.
- Campanula rapunculoides* L. False Rampion. C. S. H. vicinity. Hodenpyl, Hicks.
- Campanula rotundifolia* L. Harebell. Matheson, DeForest, Hodenpyl, Pratt.
- Campanula Trachelium* L. Coventry Bells. Havemeyer.
- Platycodon grandiflorum* A. DC. Balloon Flower. Kahn, Tiffany, Pratt, DeForest, Hodenpyl, Matheson, Bailey, Hicks, Havemeyer, Country Life Press; var. *Mariesii* Nicholls. Country Life Press.

LOBELIACEAE.

- Lobelia cardinalis* L. Cardinal Flower. DeForest, Hodenpyl, Hicks, Bailey.
Lobelia Erinus L. Edging Lobelia. Tiffany, DeForest; var. *pumila* (Blue Dwarf Lobelia), Kahn.
Lobelia gracilis Andr. Slender Lobelia. Willys.
Lobelia siphilitica L. Large Blue Lobelia. Hodenpyl.

COMPOSITAE.

- Achillea Ageratum* L. Sweet Yarrow. Pratt.
Achillea filipendulina Lam. Fernleaf Yarrow. Hicks.
Achillea tenuosa Hort. Hodenpyl.
Achillea Millefolium L. Yarrow. Laboratory grounds, C. S. H., Matheson, DeForest, Hodenpyl, Hicks; var. *rosea* Hort. Pink Yarrow. Matheson.
Achillea Ptarmica L. Sneezewort. Matheson, DeForest, Hodenpyl, Hicks, Country Life Press; var. *Boule de Neige* Hort.; var. *Pearl* Hort.; var. *Perry White* Hort. Matheson.
Achillea tomentosa L. Woolly Yarrow. Matheson, Hicks, Country Life Press.
Ageratum Houstonianum Mill. Hodenpyl; var. *nanum* Hort. Bailey.
Ageratum latifolium Hort. Little Bluestar Ageratum. Kahn.
Ageratum sp. Willys.
Anthemis tinctoria L. Yellow Camomile. Havemeyer, DeForest, Hodenpyl, Bailey, Tiffany, Hicks, Matheson, Pratt; var. *Kelwayi* Hort. Kelway Camomile. Hodenpyl, DeForest, Bailey.
Arctotis grandis Thunb. (*A. stoechadifolia* Barg.) Bushy Arctotis. DeForest, Bailey, Tiffany, Hicks, Havemeyer.
Artemisia Dracunculus L. Tarragon. Matheson, Bailey.
Artemisia Abrotanum L. Southernwood. Bailey, Hicks, Kahn, Matheson.
Artemisia lactiflora Wall. Hawthorn scented Mugwort. Country Life Press.
Artemisia pontica L. Roman Wormwood. Havemeyer.

- Artemisia sacrorum* Ledeb. var. *viridis* Hort. Summer Fir.
Matheson.
- Artemisia Stelleriana* Bess. Dusty Miller. Matheson, Sand
Spit, C. S. H., Kahn.
- Artemisia vulgaris* L. var. *lactiflora* Wall. White Mugwort.
Matheson, Kahn, DeForest, Bailey, Havemeyer, Pratt.
- Aster acuminatus* Michx. Hodenpyl.
- Aster alpinus* L. Rock Aster. Bailey, DeForest, Hicks, Have-
meyer, Pratt. Vars: *Climax*, DeForest, Hodenpyl; *Feltham*
Blue, Hodenpyl; *Glory of Colwell*, DeForest; *Lil Fardell*,
DeForest, Hodenpyl; *Mauve Cushion*, Hodenpyl; *Peggy*
Ballard, Hodenpyl; *Robert Parker*, Hodenpyl; *Snow Flake*,
Hodenpyl; *St. Egwin*, DeForest, Hodenpyl; *The Queen*, Ho-
denpyl; *Top Sawyer*, Hodenpyl.
- Aster Amellus* L. Pratt.
- Aster azureus* Lindl. Azure Aster. Bailey, Hodenpyl.
- Aster chapmani* Hort. Savannah Aster. DeForest.
- Aster cordifolius* L. Blue Wood Aster. Bailey, Hodenpyl.
Tiffany.
- Aster corymbosus* Ait.? White Wood Aster. Bailey, Hodenpyl.
- Aster cricoides* L. Hodenpyl.
- Aster laevis* L. Smooth Aster. Bailey, Hodenpyl, DeForest.
- Aster linariifolius* L. Hodenpyl.
- Aster longifolius* Longleaf Aster. Hodenpyl.
- Aster macrophyllus* L. Bigleaf Aster. Hodenpyl.
- Aster multiflorus* Ait. Wreath Aster. Hodenpyl.
- Aster novae-angliae* L. New England Aster. Bailey, Hode-
npyl, Matheson, DeForest, Hicks, Pratt; var. *roseus* (Desf.)
DC. Rosy N. England Aster. Bailey, Hicks.
- Aster novi-belgii* L. New York Aster. Bailey, DeForest, C.
S. H.
- Aster patens* Ait. Skydrop Aster. Matheson.
- Aster Prenanthides* Muhl. Hodenpyl.
- Aster subcaeruleus* S. Moore. India Aster. DeForest, Hode-
npyl, Bailey, Havemeyer.
- Aster tataricus* L. f. Tatarian Aster. Matheson, DeForest,
Bailey, Hicks, Kahn, Havemeyer.

- Aster Tradescantii* L. Michaelmas Daisy. Hodenpyl, Bailey.
Aster turbinellus Lindl. Prairie Aster. DeForest.
Aster umbellatus Mill. Flat Top Aster. Hodenpyl.
Aster undulatus L. Ware Aster. Hodenpyl.
Aster vars. *Climax* (Pale Blue Michaelmas Daisy), DeForest, Hodenpyl; *Feltham Blue* (Deep Blue Michaelmas Daisy), Hodenpyl; *Glory of Colwell* (Double Blue Michaelmas Daisy), DeForest; *Gaggie Perry* (Mauve Michaelmas Daisy), Hodenpyl; *Mrs. Walkerdine* (Pale Blue Michaelmas Daisy), Hodenpyl; *Belgian Queen*, *Blue Beard*, *Blue Gem*, *Blushing Bride*, *Brightest and Best*, *Captain Fryatt*, *Desire*. Hodenpyl.
Baccharis halimifolia L. Groundselbush. Bailey, Hodenpyl, Matheson, DeForest.
Bellis perennis L. English Daisy. Bailey, Hodenpyl, Tiffany, C. S. H., Matheson, DeForest, Hicks.
Boltonia asteroides L'Her. Boltonia (White). Bailey, Hodenpyl, Matheson, DeForest, Hicks, Havemeyer.
Boltonia latisquama Gray. Violet Boltonia. Bailey, Hodenpyl, Matheson, DeForest. Var. *nana* Hort. Dwarf False Starwort. Country Life Press.
Brachycome iberidifolia Benth. Swan River Daisy. Bailey.
Calendula officinalis L. Calendula. Kahn, Willys, Tiffany, Matheson, Bailey, Pratt.
Centaurea americana Nutt. Basket Flower. Pratt.
Centaurea Cineraria L. Dusty Miller. Tiffany, Matheson, Bailey.
Centaurea Cyanus L. Cornflower. Havemeyer, Tiffany, Matheson, Bailey.
Centaurea montana L. Mountain Bluet. Bailey, Matheson, DeForest, Hodenpyl, Willys, Hicks.
Centaurea nigra L. Knapweed. C. S. H. near lakes.
Cichorium Intybus L. Chicory. Laboratory grounds, C. S. H.
Chrysanthemum arcticum L. Arctic Chrysanthemum. Matheson.
Chrysanthemum coccineum Willd. Painted Lady. Bailey, Tiffany, Matheson, DeForest, Hodenpyl.

Chrysanthemum Leucanthemum L. Ox-Eye-Daisy. Laboratory grounds, C. S. H., Matheson.

Chrysanthemum maximum Raymond. Shasta Daisy. Pratt, Country Life Press.

Chrysanthemum Parthenium Pers. Feverfew. Matheson, Tiffany.

Chrysanthemum uliginosum Pers. Giant Daisy. Matheson, DeForest, Hodenpyl.

Chrysanthemum—*horticultural varieties*:

Bertha Fairs. Willys.

Black Hawk. Tiffany.

Bob Pulling. Tiffany, Kahn.

Bronze Buckingham. Matheson, Kahn.

Bronze Doty. Kahn.

Bronze Molly. Tiffany, DeForest.

Bronze Source d'Or. Kahn.

Bronze Turner. Willys.

Bronze Bessie. Tiffany.

Charles H. Totty. Tiffany.

Chrysolora. Tiffany.

Colonel Appleton. Tiffany.

Corporal J. Fred Piper. Willys.

Dainty. Tiffany.

Dolly Duncan. Tiffany.

Dr. Euguehard. Tiffany.

Early Frost. Kahn.

Excelsior. Willys.

Glorianna. Willys.

Godfrey's Perfection. Kahn.

Golden Glow. Tiffany.

Harvard. Tiffany.

James Fraser. Kahn.

Jeanne Nonin. Tiffany.

Klondike. Tiffany.

Lillian Doty. Tiffany, Kahn.

Louis Spears. Willys.

Louisa Pockett. Willys, Tiffany.

Majestic. Willys.

Mary. Kahn.

Mensa. Tiffany, Willys.

Meudon Surprise. Kahn.

Miss Clay Frick. Tiffany.

Miss Isabelle. Willys.
Molly Hunt. Willys.
Mrs. C. S. McKinney. Tiffany.
Mrs. E. D. Godfrey. Tiffany, Kahn.
President John Everitt. Kahn.
Rose Day. Willys.
Sergeant Wm. E. Young. Kahn.
Thanksgiving Queen. Tiffany.
Vermont. Willys.
Wee Wah. Tiffany.
Wells Late Pink. Tiffany.
White Doty. Kahn.
White Helen Frick. Tiffany.
W. H. Lincoln. Tiffany.
William H. White. Willys, Tiffany, Kahn.
William Rigby. Kahn.
William Turner. Willys, Tiffany, Kahn.
Yellow Turner. Tiffany, Kahn.

Coreopsis grandiflora Nutt. Big Coreopsis, Tick Seed. Tiffany,
DeForest, Country Life Press.

Coreopsis lanceolata L. Lance Coreopsis. Tiffany, Willys,
Matheson, DeForest, Hodenpyl, Hicks.

Coreopsis rosea Nutt. Rose Coreopsis. Hodenpyl.

Coreopsis tinctoria Nutt. Garden Tickseed. Davenport's Gar-
den and elsewhere at C. S. H. in gardens.

Cosmos bipinnatus Cay. Common Cosmos. Tiffany.

Dahlia imperialis Roezl. Candelabra Dahlia. Matheson.

Dahlia pinnata Cav. C. S. H.

Dahlia—horticultural varieties:

Attraction. Willys.
Bianca. Matheson.
Break o' Day. Matheson.
C. E. Wilkins. Matheson.
Clara Seaton. Matheson.
Colossal Palace. Matheson.
Diana. Matheson.
Dorothy Peacock. Matheson.
Dr. Roy Appleton. Matheson.
Dr. Trevis. Willys.
Elsa. Matheson.
Etendard de Lyon. Matheson.

Excelsior. Matheson.
Fiet. Matheson.
Florence. Stredwick. Matheson.
Forest Loma. Matheson.
Futurity. Matheson.
F. W. Fellowes. Matheson.
General Miles. Matheson.
Glory of New Haren. Matheson.
Goethe. Matheson.
Harvest Moon. Matheson.
Jack Rose. Willys.
J. B. Riding. Matheson.
Jean Wood. Matheson.
Jessie Seal. Matheson.
John Riding. Matheson.
Jonkheer Borsel. Matheson.
Judge Marcan. Matheson.
La Favorita. Matheson.
Lady Helen. Matheson.
Lady Thornton. Matheson.
LeGrand Manitou. Matheson.
Magnificent. Matheson.
Maid of Mist. Willys.
Marjorie Hillbank. Matheson.
Mars. Matheson.
May Matheson. Matheson.
Mephistopheles. Willys.
Mrs. Carl Salbach. Matheson.
Mrs. C. G. Breck. Matheson.
Mrs. E. C. Boston. Matheson.
Mrs. Edna Spencer. Matheson.
Mrs. Estes. Matheson.
Mrs. Ethel F. T. Smith. Matheson.
Mrs. F. C. Burns. Matheson.
Mrs. Ferdinand Jeffries. Matheson.
Mrs. I. deVer Warner. Matheson.
Mrs. Roosevelt. Matheson.
Mrs. Salbach. Matheson.
Mrs. Stevenson. Matheson.
Mrs. Stredwick. Matheson.
Merthus. Matheson.
Papa Charmer. Matheson.
Patrick O'Mara. Matheson.
Pierrrot. Matheson.

Pride of California. Willys.

Prima Donna. Matheson.

Queen Esther. Matheson.

Rawson. Matheson.

Rosa Nell. Matheson.

Sagamore. Matheson.

Walter Jennings. Matheson.

Dimorphotheca annua Less. Double Cape Marigold. Bailey.

Dimorphotheca aurantiaca DC. Cape Marigold. Pratt, C. S.
H. vicinity.

Doronicum caucasicum Bieb. Caucasian Leopard Bane. De-
Forest, Hicks.

Echinacea angustifolia DC. Hodenpyl.

Echinacea pallida Hort. Hodenpyl.

Echinacea purpurea Moench. Tiffany, DeForest, Bailey, Hicks.

Echinops Ritro L. Steel Globethistle. Tiffany, Matheson,
Havemeyer, Pratt, Country Life Press.

Erigeron alpinus Alpine Fleabane. Bailey.

Erigeron glabellus Nutt. Smooth Fleabane. Havemeyer.

Erigeron speciosus DC. Oregon Fleabane. Hodenpyl, Have-
meyer; var. *grandiflorus* Hort. (Purple Oregon Fleabane),
Hodenpyl; var. *superba* Hort., Country Life Press.

Eupatorium coelestinum L. Mist Flower. Matheson, DeFor-
est, Hodenpyl, Tiffany, Hicks, Havemeyer.

Eupatorium purpureum L. Joe Pye Weed. Tiffany, Hodenpyl,
Matheson.

Eupatorium urticacifolium Reichard. Snow Thoroughwort.
Matheson, DeForest, Hodenpyl.

Gaillardia aristata Pursh. Common Perrennial Gaillardia.
Bailey, Tiffany, Matheson, Hodenpyl, Hicks, Pratt.

Helonium autumnale L. Common Sneezeweed. Havemeyer,
Matheson, DeForest, Hodenpyl, Hicks, Bailey; var. *superb-um* Hort. (Red Sneezeweed), Kahn, Hodenpyl; "*Riverton Beauty*," Country Life Press; "*Riverton Gem*," Country Life Press; var. *pumilum* Hort., Country Life Press.

Helonium Hoopesi Gray. Orange Sneezeweed. Hodenpyl, Have-
meyer.

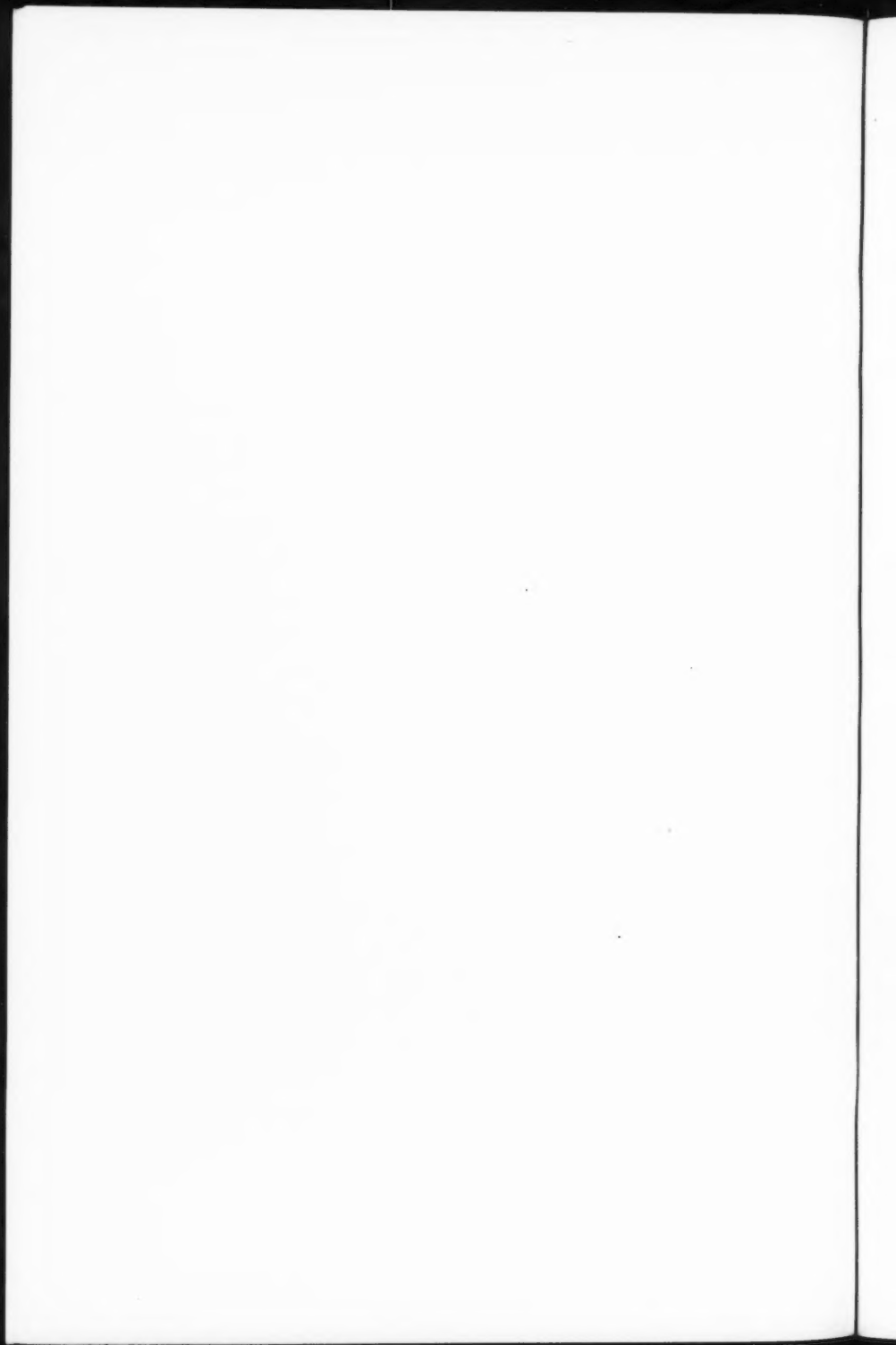
- Helianthella quinquenervis* Gray. Hodenpyl.
Helianthus annuus L. Sunflower, C. S. H. Var. *nanus* fl. pl.
 (Double Dwarf Sunflower), Matheson; var. *coronatus*
 Hort. Red Sun Flower. C. S. H. vicinity.
Helianthus debilis Nutt. Cucumber Leaved Sunflower. Bailey,
 C. S. H.
Helianthus decapetalus L. Thinleaf Sunflower. Hodenpyl.
Helianthus giganteus L. Indian Potato. Matheson, Hodenpyl.
Helianthus grosse-serratus Martens. Sawtooth Sunflower. Ho-
 denpyl.
Helianthus laetiflorus Pers. Showy Sunflower. Matheson.
Helianthus Maximiliani Schrad. Maximilian Sunflower. Tif-
 fany, Matheson, DeForest.
Helianthus mollis Lam. Ashy Sunflower. Hempstead Plain.
 DeForest, Hodenpyl.
Helianthus orgyalis DC. Hicks.
Helianthus tuberosus L. Jerusalem Artichoke. Tiffany, Ho-
 denpyl, Bailey.
Helichrysum bracteatum Andr. Strawflower. Tiffany, Bailey.
Heliopsis helianthoides Sweet. Var. *pitcheriana* Hort. Pitcher
 Heliopsis. Matheson.
Hieracium aurantiacum L. Orange Hawkweed. Laboratory
 grounds, C. S. H.
Inula montana L. Mountain Inula. Havemeyer.
Lcontopodium alpinum Cass. Common Edelweiss. DeForest.
Lepachys pinnata (Vent) T. & G. DeForest.
Liatris punctata Hock. Dotted Gay Feather. Hicks.
Liatris pycnostachya Michx. Kansas Gay Feather. Country
 Life Press.
Liatris spicata (L.) Willd. Spike Gay Feather. DeForest,
 Hodenpyl, Hicks, Bailey.
Liatris squarrosa Willd. Hodenpyl.
Petasites fragrans Presl. Sweet Butternut. Hodenpyl.
Petasites Japonica F. W. Schmidt. Japanese Butterbur. Ho-
 denpyl.
Pyrethrum uliginosum Hort. Moon Daisy. Country Life Press.
Rudbeckia californica Hort. California Coneflower. Hodenpyl.

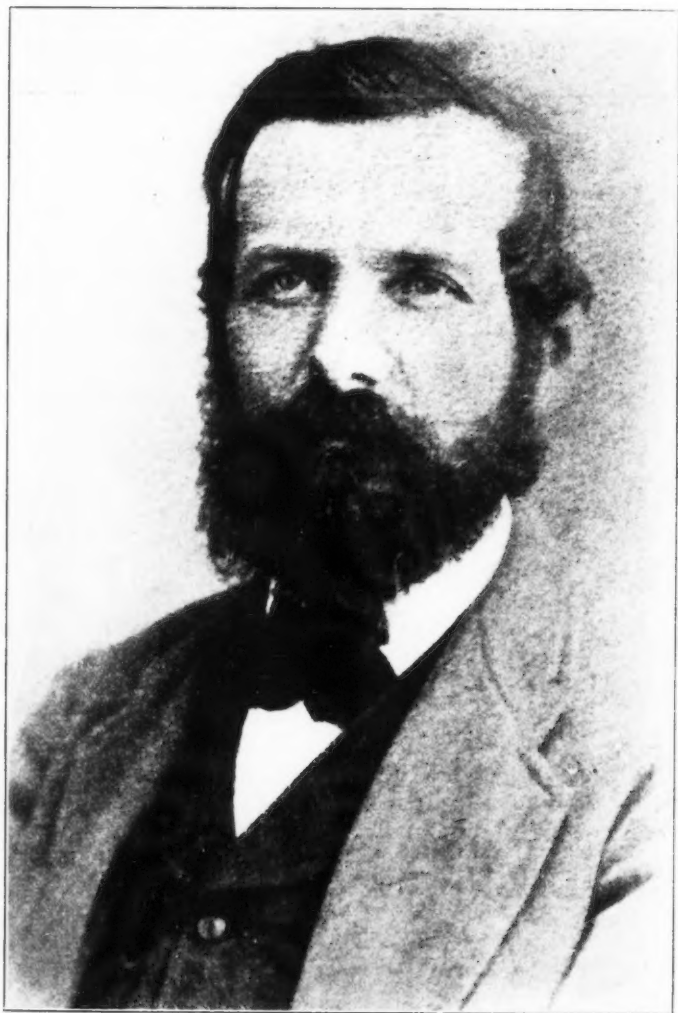
- Rudbeckia hirta* L. Black-Eyed Susan. Hodenpyl, Bailey, Tiffany, Matheson, Hicks.
- Rudbeckia laciniata* L. Matheson. Var. "Goldenglow," Bailey, Tiffany, Willys, Matheson.
- Rudbeckia speciosa* Wenderoth. Black-Eyed Susan. Country Life Press.
- Rudbeckia triloba* L. Matheson.
- Santolina Chamaecyparissus* L. Lavender Cotton. Matheson, Kahn, Bailey, Havemeyer, Country Life Press.
- Senecio Cineraria* DC. Matheson.
- Senecio cruentus* DC. Bailey, Tiffany, Willys.
- Senecio pulcher* Hook and Arn. Uruguay Groundsel. Hodenpyl.
- Silphium perfoliatum* L. Cup Rosinwood. DeForest.
- Solidago bicolor* L. White Goldenrod. Hodenpyl.
- Solidago Boottii* Hook. Boott Goldenrod. Hodenpyl.
- Solidago canadensis* L. Canada Goldenrod. Hodenpyl.
- Solidago erecta* Pursh. Scepter Goldenrod. Hodenpyl.
- Solidago glomerata* Hort. Cluster Goldenrod. Tiffany, DeForest, Hodenpyl.
- Solidago juncea* Ait. Hodenpyl.
- Solidago nemoralis* Ait. Oldfield Goldenrod. Hodenpyl.
- Solidago ohioensis* Riddell. Hodenpyl.
- Solidago patula* Muhl. Roughleaf Goldenrod. Hodenpyl.
- Solidago pubens* Furry Goldenrod. Hodenpyl.
- Solidago rigida* L. Stiff Goldenrod. Hodenpyl.
- Solidago rugosa* Mill. Wrinkled Goldenrod. Hodenpyl.
- Solidago sempervirens* L. Seaside Goldenrod. Willys, DeForest.
- Stokesia laevis* Greene. Stokes Aster. Matheson, Hicks, DeForest, Hodenpyl, Pratt; var. *alba* Hort. (White Stokesia), DeForest, Hodenpyl, Bailey.
- Stokesia palmata* Hort. Hodenpyl.
- Stokesia ulmariaflora* Hort. Hodenpyl.
- Tagetes erecta* L. Aztec Marigold. Tiffany, Kahn.
- Tagetes patula* L. French Marigold. Willys.
- Townsendia exscapa* Porter. Hodenpyl.
- Zinnia elegans* Jacq. Youth and Old Age. Pratt, Bailey, Tiffany, Hodenpyl.

PROFESSOR JACOB BOLL AND THE
NATURAL HISTORY OF THE
SOUTHWEST

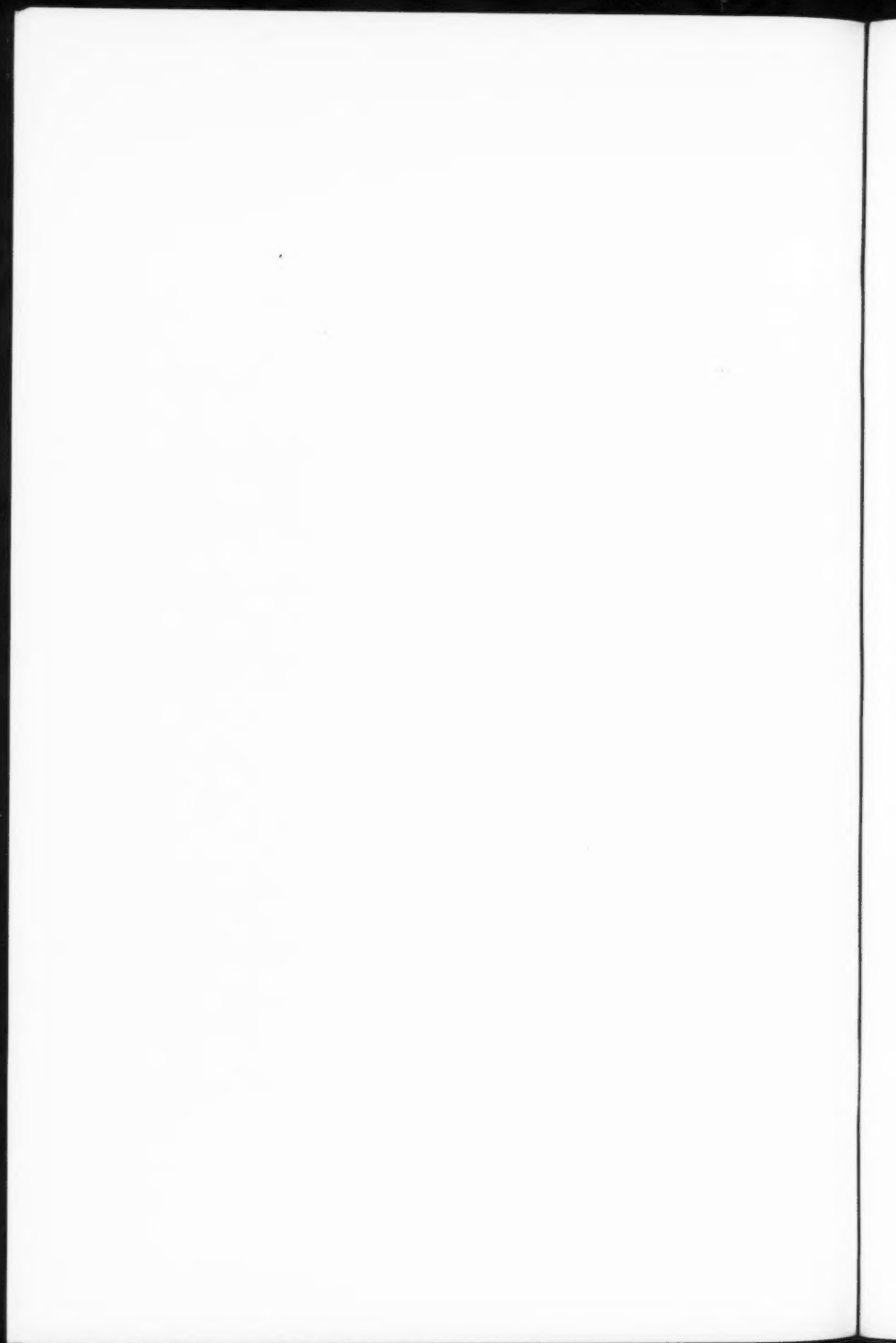


S. W. GEISER
Southern Methodist University





PROFESSOR JACOB BOLL



I.

In his brochure entitled, *The Botany of Texas*, Winkler¹ has done a conspicuous service in preserving to present-day workers the personalities and achievements of earlier students of the flora of the Southwest. It is a curious fact that while the museums of America and Europe are full of specimens collected in Texas by numbers of gifted collectors, one nevertheless often searches in vain for notes regarding the lives of the collectors themselves. Lindheimer, the "Father of Texas Botany" who died in 1879 after nearly a half-century of pioneer work (in which he collaborated with Asa Gray and Dr. George Engelmann) waited until 1907 for an adequate biographical sketch to appear.² The names of other naturalists and collectors in the Southwest, such as H. P. Attwater, R. Menger, J. A. Singley, G. W. Belfrage, Julien Reverchon, Howard Lacey, Rev. G. Birkmann, Charles D. Oldright, and Jacob Boll (to all of whom we are indebted for highly valuable field-observations and collections) are merely names, and little or no account is preserved of their lives and work.

It is with this in mind, and with the desire to record the chief events in the life of one of the most accomplished of these earlier naturalist-collectors that the present writer offers this sketch of the life of Jacob Boll and his influence on the natural history of the Southwest. It has not been an easy task to gather the broken threads of an almost for-

¹ WINKLER, C. H. *The Botany of Texas, an Account of Botanical Investigations in Texas and Adjoining Territory*. Bull. Univ. Texas, 1915, no. 18, 1915.

² Biography in J. W. BLANKENSHIP: *Plantae Lindheimerianae, Part III*. Ann. Rept. Missouri Bot. Garden, vol. 18, pp. 119-233, 1907.

gotten narrative. Jacob Boll died in 1880, nearly fifty years ago. While he has left descendants in the city of Dallas, he was of so singularly modest and retiring a disposition that Dr. Robert T. Hill³, writing of him only seven years after his death, was unable to gather any details of his life and personality. Like Lindheimer, Boll never spoke of his special interests. In a frontier country, with few associates that could appreciate his work, he worked in silence, motivated only by his inner light. Another factor beside his modesty that contributed to his inarticulateness was the language-difficulty. But two English papers appeared from his pen (outside of newspaper articles), and these two appeared within a year of his death. Hill (*l. c.*) has said of these that they "were only the introduction to what promised to be valuable original contributions to the geology of Texas." The combined result of his early death and his unusual reticence is the fact that his part in the scientific development of Texas has been forgotten, if, indeed, it ever was adequately known. The following appear to be the facts of his life:

Jacob Boll was born the son of Henry and Magdalena (Peier) Boll, at Bremgarten, Canton Aargau, Switzerland, on May 29, 1828. He was the eldest of five children. His parents were fairly well-to-do and enabled him, after a *Gymnasium* career in Switzerland, to attend for two years the University of Jena, where he studied chemistry, natural history, and pharmacy. He left the university in 1853 without a degree, returned to his native town where he became an apothecary in his own pharmacy, married Henriette Humbel of Bremgarten, and settled down. During their twenty years of married life, three children were born. The pharmacy (which he had bought with his wife's dowry) did not prosper, for Jacob Boll was too much interested in natural history to devote very much of his at-

³ HILL, R. T. *The Present Condition of Knowledge of the Geology of Texas*. Bull. no. 45, U. S. Geological Survey, 1887.

tention to the conduct of the business. In 1869 he sold out the pharmacy, thinking to recoup his losses in America, especially in Texas, where early German colonization had effected a strong German element in the population. Then, too, his brother Henry had come to *La Réunion*, near Dallas, (where Victor Considerant had founded a communistic colony on the phalansterian ideas of Fourierism) and the later arrival of his parents and other kin made Texas a new home for Jacob Boll.

During the seventeen years spent in the Bremgarten pharmacy Boll had continually collected the plants and animals of his Canton. His botanical studies bore fruit in a thin duodecimo of 127 pages on the flora of Bremgarten, published during the late summer of 1869.⁴ During this period (1853-1869) Boll for some time served as Professor of Natural History in the college at Bremgarten, and was elected to membership in a number of scientific societies in Switzerland and Germany, being even elected to honorary membership in the *Academia Caesaraca Leopoldiana* of Germany, (according to Mr. John Henry Brown, the historian of the Southwest, who then lived at Dallas.) For years he made annual and semi-annual explorations of the Alps. "He won a wide reputation by his researches and published essays. He was also appointed by the government examiner of physicians and pharmacists, and also held the government seal in the departments of zoology and natural history . . . He was a collaborator on the Geological Map of Switzerland."⁵

Professor Boll arrived in America late in 1869. On his way to Texas he stopped off at Cambridge to visit his com-

⁴ BOLL, J. *Verzeichniss der Phanerogamen-und Kryptogamen-Flora von Bremgarten, dem untern Freiamt, Hallwilersee, Limmathal und den angrenzenden Theilen des Kantons Zurich*. Aarau, Druck & Verlag von J. J. Christen, 1869. viii+127 pp. (Copy in Beilharz Collection.)

⁵ BROWN, J. H. *Memoir of the late Professor Jacob Boll*. Dallas Daily Herald, Oct. 7, 1880.

patriot, Professor Louis Agassiz, with whom he long had corresponded. Agassiz received him affectionately and sent him to Texas "on expense," where he made a large collection of minerals, plants, insects, and other animals for the Harvard museum. He remained in Texas about a year. Among the specimens sent to Agassiz during this time were two of a new species of snake, later (1883) described by Garman as *Amphiardis inornata*.⁶ During the winter of 1870 he returned to Cambridge, where he had an unofficial position with Agassiz as custodian in the department of zoology at Harvard. Early in the spring of 1871 he journeyed to Switzerland, where his cantonal government demanded his services in the investigation of the phylloxera-pest of the grape. He had, however, previously written Agassiz from Switzerland regarding appointment to an Assistantship in the Museum of Comparative Zoology. Agassiz wrote to him in a most cordial vein, and Boll, led by a sense of obligation, returned to Cambridge. As all of Agassiz's letters are of worth in showing the personality of this great teacher, and this is of exceptional value in showing his estimate of Jacob Boll, this letter is here reprinted in its entirety.

(Letter from Professor Agassiz to Jacob Boll.)⁷

Cambridge, Mass., den 9ten May, 1871.

Mein lieber Herr Boll,

Ihr Brief ist mir schon vorigen Monat zugekommen, aber ich konnte eigentlich nicht unmittelbar antworten, weil ich mit Sorgen so überhäuft war, dass ich mich nicht recht zu einem deutlichen Entschluss bringen konnte. Heute sind diese äusseren Schwierigkeiten überwunden und ich beeile mich nun Ihnen meinen Vorschlag zu bestätigen, dass Sie nach Cambridge kommen und eine regelmässige Verbindung mit unserm Museum eingehen. Ich biete Ihnen als Besoldung \$100.00 monatlich und ihre Reisekosten hierher, sowohl als auf etwaigen Excursionen und Reisen während Ihres Aufenthalts in den Vereinigten Staaten. Bei dem

⁶ GARMAN, S. *The Reptiles and Batrachians of North America*. Memoirs Mus. Comp. Zool., vol. 8, no. 3, 1887.

⁷ Letter in Beilharz Collection. Partially reproduced in fac-simile in the *Dallas Morning News*, Oct. 21, 1928.

gegenwärtigen Zustande unserer Anstalt wäre es mir besonders erwünscht, wenn Sie recht bald kommen könnten, da ich selbst gegen Herbst eine Reise antreten werde und es mir wichtig wäre, vor meiner Abreise mich mit Ihnen und Dr. Hagen gemeinschaftlich über die vorzunehmenden Arbeiten für den Winter besprechen zu können. Es versteht sich von selbst, dass bei einer Anstellung, die vor der Hand nicht als lebenslänglich betrachtet werden kann, es Ihnen mir frei stehen sollte, entweder jährlich oder halbjährlich den Vertrag aufbünden zu können, und um Ihnen zu zeigen, wie ernstlich es mir zu tun ist, Ihren Wünschen zu entsprechen und Sie zu bewegen, dieses Anerbieten anzunehmen, will ich es Ihnen überlassen zu bestimmen, wie Sie es hiermit halten wollen. Nur eines wünsche ich Sie recht angelegentlich zu berücksichtigen, dass es für mich wie für unsere Anstalt von Wichtigkeit wäre, wenn Sie möglich bald hierher kommen könnten.

Es hat mich sehr gefreut zu vernehmen dass Sie glücklich in Ihre Heimath zurückgekehrt sind, und die Ihrigen alle wohl befunden haben. Mit der Sendung der noch in Ihren Händen befindlichen Exempläre hat es keine Eile. Sie könnten dieselben ebensogut selbst mitbringen.

Freundschaftlichst, Ihr

L. AGASSIZ.

No sooner had he returned to America, than the very severe illness of his wife in a hospital in Switzerland, recalled him to her side, and there he remained until her death in August, 1873. After her death Agassiz renewed his invitation. Although the hand of illness was heavy upon him, he wrote, in a script that betrayed his physical infirmity, the following letter but two months before his own death on December 14, 1873. It is characteristic of Agassiz that in his own suffering he still could be solicitous for the happiness of others, as this letter shows.

(Letter from Professor Agassiz to Jacob Boll.)⁸

Cambridge, den 15. Oktober, 1873.

Lieber Herr Boll,

Da der Herbst heranrudert kann ich wohl voraussetzen, dass Sie von Ihren Sommerexcursionen zurückgekehrt und jetzt wieder zu Hause sind; vielleicht erwarten Sie schon seit einiger Zeit meine Antwort. Ich bin aber diesen Sommer so sehr in Anspruch genommen worden, dass mir die Zeit unbemerkt vorübergegangen ist. Auch bin ich wirklich unwohl gewesen, obgleich nicht gefährlich, wie die Zeitungen es gemelden.

⁸ Letter in Beilharz Collection.

Sie sind richtig unterrichtet worden als Ihnen gesagt wurde, unsere Anstalt habe bedeutliche Mittel erhalten, und ich bin in jeder Weise bemüht die Sammlungen zu erweitern. Ihre Rückkehr wird daher willkommen sein. Sie werden indess einen neuen Mitarbeiter im entomologischen Fach, neben Herrn Dr. Hagen finden, Herrn Crotch, früher in Cambridge in England, und einige jüngere Gehülften. Auch die Sammlung ist durch Ankäufe bedeutend vermehrt. Es freut mich zu vernehmen, dass Sie in den Ordnungen gesammelt, die nicht so allgemein berücksichtigt werden. Bringen nur Sie alles mit, was Sie zusammentreiben können. Es wäre mir auch lieb, wenn Sie von ganz gemeinen Sachen Massen sammeln könnten für den Gebrauch unserer Studenten. Ich hoffe, Sie haben selbst daran gedacht, denn in dieser Jahreszeit kommt ein solches Verlangen zu spät.

Es würde mich freuen zu vernehmen, dass Ihre traurigen Verhältnisse sich ruhig gelegt haben.

Freundschaftlichst, Ihr

Herrn J. Boll.

L. AGASSIZ.

There could be but one reply. Jacob Boll returned for the last time to Cambridge. On arriving in America in January, 1874, he learned that his old preceptor and friend, Agassiz, had died. Feeling that the old days had passed away, he turned to Texas, where his aged mother and her other children lived. For seven years, from 1874 to the time of his death, Boll investigated the geology and mineral resources, and the natural history of Texas. His field work was of conspicuous importance in both the field of geology and natural history, and will be presently assessed under those heads (*vide infra*.) In the absence of a geological survey, he made careful studies in the field, particularly in Northern and Western Texas; and it was on one of these field trips, in Wilbarger County, on September 29, 1880, that he died of appendicitis, after an illness of ten days.⁹

Finally, in this brief sketch, a few words about the *man* may be in order. In stature and appearance he was of less than usual height. His brow was broad and high, his eyes greyish-blue, his countenance *heiter*. He was a merry but

⁹ Obituary notices appear in the *Galveston Daily News*, Oct. 10, 21, 1880; and *Dallas Daily Herald*, Oct. 1, 19, 1880. See Note 5, *supra*.

quiet companion, of singularly gentle and kindly disposition. He was a character in his day among the ignorant of Dallas who could not appreciate the familiar figure in long yellow duster and with collecting case in hand.

II.

Professor Boll was introduced to the geology of the Southwest under peculiar circumstances. In the late 'seventies a battle of the Titans was on in the field of Vertebrate Palaeontology, between Prof. Othniel C. Marsh of Yale College and Professor Edward D. Cope of Philadelphia. Marsh (whose generous impulses were rarely stirred when a fellow-scientist was involved) bitterly resented the encroachment of a man nine years his junior upon the field of vertebrate paleontology, for he conceived this field to be his private preserve. Such an attitude bred bitter resentment in Cope, with the result that both men furiously collected, studied, and published in attempts to anticipate each other in the discovery and publication of the fossil vertebrates of the West. Cope from 1871-77 had carried on explorations in the Cretaceous of Kansas and the Tertiary of Wyoming and Colorado. He had also worked with the United States Geological Survey in New Mexico (1874), Montana (1875), and Oregon and Texas (1877.) Cope came to Dallas several times during the summer of 1877; the first time to visit an amateur botanist of some distinction, Julien Reverchon, and to seek advice in the securing locally of a collector of vertebrate fossils from the beds then considered as of Triassic age but now known to be Permian. Mr. Reverchon recommended the selection of Boll, who as a result was sent out in the spring of 1878 into what was then the wilderness of Northwest Texas, the Permian country. His first fossil vertebrate of the Permian was collected on Onion Creek, a tributary of the Little Wichita River in Archer County. Amazing collections of fossil vertebrates were later collected at various points along the Big and the Little Wichita and their confluents.

The Wichita beds became famous in the scientific world as the repository of a series of strange forms of remarkable primitive Batrachia with complex vertebrae; primitive reptilia; and lung fishes. "Subsequent [collection] installments revealed a new and wonderful fauna rich in species and often offering widely from any previously known."¹⁰ In a paper published in May, 1878, Cope¹¹ described new genera and species of Ctenodontid *Dipnoi*, Archegosaurid, Cricotid, and Eryopid *Stegocephalia*, Diadectid and Pariotichid *Cotylosauria*, and Clepsydroid and Bolosaurid *Pelycosauria*. Other new species were described in papers in the years 1878-84,¹² and subsequently. Very many of these new species were collected by Professor Boll.

He early recognized the "Red Beds" of Northern Texas as of Permian age. As Dr. Robert T. Hill has said (*op. cit.*, p. 66), "Prof. Jacob Boll made the first intelligible announcement of the Permian in Northwest Texas in a brief sketch in the *American Naturalist* for 1880.¹³ He mentioned his explorations of the previous field season which extended over the entire length of the Little Wichita River and its confluents. As the result of this six months of exploration he announced that he had discovered many new 'plants and animals, consisting of petrified ferns, fishes, and reptiles.' These, he asserted, all belonged to the transitional period, and especially to the lower and upper Permian." This paper was published (the month of Boll's death) with the approval of Cope, who at the time was one of the editors of the *American*

¹⁰ GILL, T. Edward Drinker Cope, *Naturalist—A Chapter in the History of Science*. Science, n. s., vol. 6, pp. 225-243, 1898. p. 232.

¹¹ COPE, E. D. *Descriptions of extinct Batrachia and Reptilia from the Permian Formation of Texas*. Proc. Amer. Phil. Soc., vol. 17, pp. 505-530, 1878.

¹² See COPE, in *American Naturalist*, 12:57, 327-28, 406-08, 565, 633, (1878); *Proc. Amer. Phil. Soc.* 17:172-193, 505-530; 19:38-58; 20:447-74, 627-36 (1880-83); *Amer. Naturalist* 14:609-10 (1880).

¹³ BOLL, J. *Geological Examinations in Texas*. *American Naturalist*, vol. 14, pp. 684-686, 1880.

Naturalist. That Cope valued Boll highly as a collector appears from the short biographical sketch of him in *Appleton's Cyclopaedia of American Biography*¹⁴, inspired by Cope, in which it is said: "Mr. Boll made many important discoveries in the formations that he explored. He was an expert naturalist, and a most successful collector in many departments of natural history." Hill (*l. c.*), writing seven years after Boll's death also speaks appreciatively of him as "an able Swiss zoologist and geologist" whose "writings were only the introduction to what promised to be valuable original contributions to the geology of Texas." His death was a loss amounting to tragedy for Texas science.

One may remark in passing that the Rev. W. F. Cummins, a friend of Professor Boll, was appointed at his death to continue his work. He developed into a very capable collector and field-man, and on the establishment of the Dumble Survey of Texas in 1888, became Assistant State Geologist.

Boll made studies on the mineral resources of Texas for Cope and eastern capitalists. In his 1880 paper (*vide* note 13, *supra*) he noted the occurrence of lead, zinc, copper and iron ore along the Big and Little Wichita rivers. The state Geological Survey had been terminated in 1876, and from that time until his death Boll had served in a volunteer capacity. At the time of his death there was some movement to resume the office of State Geologist, and to appoint him to fill it. As he "enjoyed the fullest confidence and esteem of Governor Roberts, Senator Coke, and nearly all public men" it is probable that had he lived he would have been made State Geologist of Texas¹⁵.

III.

Professor Boll was a gifted and versatile student of both botany and zoology. His seventeen years of devotion to the study of the natural history of his own Canton came to

¹⁴ Volume 1, p. 307, 1887.

¹⁵ [BROWN, J. H.] *Dallas Daily Herald*, Oct. 7, 1880.

fruition in his "*Verzeichnis der Phanerogamen- und Kryptogamen-Flora von Bremgarten. . .*"—the thin duodecimo referred to above. In the preface, dated July 9, 1869, he states that after his return to Bremgarten in 1853 he had continually collected and studied the animals and plants of his locality. The *Verzeichnis* gives notes on 1386 species of plants (307 of them are Cryptogams.) Boll grounded himself so well in natural history that when he returned from America the *Regierungsrath* of the Canton Aargau¹⁶, wrote him a formal letter and authorization, requesting him to make, in Texas, collections of the seeds of the common forest trees, as well as marine and freshwater shells, and Texas fossils. He was also later (1875) asked to make up biological sets on the Colorado potato-beetle (only just then becoming a pest in America), and a letter of thanks from the *Regierungsrath*¹⁷, records the safe arrival of beetle collections in such abundance that every school in the Canton had specimens for its students.

In 1874 he was commissioned by a group of French scientists to investigate the native silkworms with a view to introducing hardier species into France. In the *Galveston Daily News* of Oct. 10, 1880, Mr. N. A. Taylor states that Professor Boll was offered \$8,000 for a large collection of Texas minerals and plants, but one is inclined to consider the detail an error. Beside the extensive collections of animals, plants, and minerals made for the Harvard Museum, and of insects made for the Peabody Museum at Salem, he also collected fishes, reptiles, and amphibia for Cope. (*Vide infra*.) He was appointed a member, in charge of Texas, of the U. S. Entomological Commission for the study of the Rocky Mountain locust, under Dr. Charles V. Riley. During all this time Boll was corresponding with zoologists everywhere. Riley¹⁸

¹⁶ Letter from "Regierungsrath des Kantons Aargau" to Jacob Boll, of date March 6, 1871. (Beilharz Collection.)

¹⁷ Of date Sept. 19, 1877. (Beilharz Collection.)

¹⁸ RILEY, C. V. *Trans. Acad. Sci. St. Louis, 1868-1877*, vol. 3, p. clxxiii, 1878.

recorded (in a paper read at the March 16, 1875, meeting of the St. Louis Academy of Sciences) correspondence with Boll and exhibited before the Academy four types of freshwater crustacea sent on from Dallas. Professor Philip Zeller¹⁹ described several new species among the Geometrid moths from material collected by Boll for Agassiz, and subsequently corresponded and exchanged with Professor Boll personally. How extensively and how profitably Boll collected in these early days may be seen by thumbing carefully, say, Cresson's²⁰ *Hymenoptera Texana* (1872), and Packard's²¹ *Monograph of the Geometrid Moths* (1876), where new species are described from Texan collections of J. Boll and G. W. Belfrage, and valuable observations added from their notes. With all of these entomologists he was in close correspondence. R. Ellsworth Call²² described a new species of freshwater clam from Dallas, *Unio bolli* (= *Quadrula aurea* Lea) in 1881, and Professor Cockerell in 1910 described a bee, *Nomia bolliana*, based on specimens collected in the early days at Dallas by Jacob Boll.

He collected insects of all sorts for museums over the entire world, but in his own collection specialized on microlepidoptera. At Boll's death this large collection, together

¹⁹ ZELLER, P., in *Verhandl. d. Bot.-Zool. Gesellschaft in Wien*, vol. 22, circa pp. 470-500, 1872.

²⁰ The Introduction to this work tells of the excellent collecting done in Texas by BELFRAGE in Bosque county, BOLL in Dallas county, and HEILIGBRODT in Bastrop and Travis counties. For an excellent account of this distinguished naturalist, who for a short time resided in Texas, see P. P. CALVERT: "Ezra Townsend Cresson, a Contribution to the History of Entomology in North America," (Trans. Amer. Entom. Soc., vol. 52, Supplement, pp. i-lxiii, 1928.)

²¹ PACKARD, A. S. *A Monograph of the Geometrid Moths or Phalaenidae of the United States*. Rept. U. S. Geol. Surv. Territories, vol. 10, 1876.

²² CALL, R. E. *Unio bolli*, *New Species*. American Naturalist, vol. 15, pp. 390-91, 1881.

with his notebooks, passed into the hands of B. Neumoegen and Dr. Charles V. Riley, as appears in a letter from Riley²³.

Professor Boll had also a lively interest in experimental zoology. He had a large colony of silkworms in Dallas, fed them various sorts of food, and noted the quality of silk produced with the diverse types of food. He found, among other things, that the finest quality is produced indifferently on mulberry and Osage-orange (*Maclura*) leaves. He also carried American species of silkworms to Switzerland and noted changes occurring in them with new climatic and food conditions. Relative to his silkworm experiments, a letter from Professor Moritz Wagner²⁴ of Munich, dated Oct. 11, 1873, gives a very compact picture of the impression made upon a competent European authority by the work of Professor Boll. It is here reproduced in its entirety:

(Letter from Professor Moritz Wagner to Jacob Boll.)

München, den 11. Oktober, 1873.

Geehrter Herr!

Ihre werten Zeilen vom 9. Oktober trafen mich auf dem Krankenbett, auf welchem mich ein schmerzliches Leiden seit einigen Wochen festhält. Sobald ich im Stande sein werde, auszugehen, werde ich Ihnen die gewünschte Entschädigung für die mir gefälligst überlassene *Saturnia luna* bestehend aus einigen seltenen Vogelbälgen, besonders Colibris aus der Schneeregion der Anden von Ecuador, mit der Sie dem Museum von Cambridge gewiss grosse Freude machen, sowie einige Schmetterlinge von Chimborazo, wahrscheinlich auch neue nicht beschriebene Species, in einer Schachtel per Post zusenden. Diese Gegenstände liegen leider nicht in meiner Wohnung, sondern im Akademiegebäude.

In meiner nächsten grösseren Schrift: "Neue Beiträge zu den Streitfragen der Entwicklungslehre" werde ich des sehr interessanten Falles der raschen Veränderung des von Ihnen nach der Schweiz versetzten Spinners, schon in der zweiten Generation, sehr ausführlich erwähnen, und dabei das hohe Verdienst betonen, das Sie sich durch diesen ausserst merkwürdigen Versuch um die Wissenschaft, gerade in einer so brennenden Streitfrage, erworben haben. In die *Augsburger Allge-*

²³ Letter from C. V. Riley to Mrs. Henrietta Beilharz, of date May 10, 1881. (Beilharz Collection.)

²⁴ From Beilharz Collection.

meine Zeitung, welche sehr verbreiten und viel gelesen wird, werde ich aus dieser Schrift zuvor einen Auszug geben und Ihres Verdienstes gleichfalls in der aner kennendsten Weise erwähnen.

Dass Sie jetzt im Begriffe sind, das Experiment in entgegengesetzter Richtung zu wiederholen, d. h., Puppen oder Eier von europäischen Schmetterlingen nach Amerika mitzunehmen, interessiert mich ausserordentlich. Ich werde Ihnen dazu ganz besonders die häufigeren Arten der Gattungen *Euprepia Catocala*, *Phura* u. s. w. überhaupt die allergemeinsten und fruchtbarsten Arten, besonders aus der Familie der Bombycis empfehlen. Durch Wechsel der Nahrung, des Klimas, u. s. w. werden sich nach meiner Ueberzeugung gerade aus solchen häufigen Arten am leichtesten stärkere Variationen erzielen lassen. Sie würden mich zum grössten Dank verpflichten, wenn Sie mich von den Resultaten dieser Versuche seiner Zeit in Kenntniss setzen wollten.

Mit ausgezeichnete Hochachtung,

Ihr dankbarst ergebener

M. WAGNER.

K. Universitäts-Professor
Maximilienstr. 21.

Perhaps Boll's most conspicuous service in the field of recent zoology lay in the collections made for Cope of reptiles, amphibians, and fishes in northern and western Texas. For this purpose he ranged from the Red River on the north to old Fort Concho (now San Angelo, in Tom Green County) on the south and west. In his paper, entitled, "*On the Zoological Position of Texas*"²⁵ Cope lists in detail Boll's collections at various localities in this area. Four (or five) new species of recent vertebrates are described from material Boll collected: "Boll's Spotted Lizard" (*Holbrookia maculata lacerata* (Cope)), the "Blunt-Tailed Skink" (*Eumeces pachyurus* Cope, of which the unique type-specimen, from Dallas, has been lost), the "Short-lined Skink" (*Eumeces brevilineatus* Cope) found at Fort Concho immediately after Marnoch had discovered it at Helotes Creek, and "Boll's Sucker" (*Ameiurus bolli* Cope) described from the waters of the Little Wichita

²⁵ COPE, E. D. *On the Zoological Position of Texas*. Bulletin no. 17, U. S. Nat. Museum, 1880.

River. To this group of new species must be added, of course, "Garman's Snake" (*Amphiardis inornatus* Garman) collected at Dallas, and now in the Museum of Comparative Zoology at Cambridge.

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